McLaren Hart™

92 AUG 12 AM 8:14

August 5, 1992

Ms. Eva Chu
Alameda County Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, CA 94621

Dear Ms. Chu:

This letter serves as a letter of transmittal for McLaren/Hart's "June 1992 Quarterly Groundwater Monitoring and Interim Remediation Report for Former Alameda Service Station A-578", located at 7608 Amador Valley Boulevard, Dublin, California. This document was prepared for Target Stores at the request of the Alameda County Hazardous Material Division.

The quarterly report was prepared in accordance with McLaren/Hart's work plan entitled "Proposal and Cost Estimate to Conduct Quarterly Groundwater Sampling and Interim Remediation at the Target Store T-328 Dublin, California" dated September 4, 1991. The work plan was approved by the Alameda County Department of Environmental Health. This report also includes a summary of interim groundwater remediation activities that were conducted as specified in the letter entitled "Update of Schedule for Interim Groundwater Remediation at the Former Target Store T-328 Dublin, California" dated November 15, 1991.

The June 1992 sampling completes one year of quarterly monitoring groundwater under the current proposal. Additional sampling and interim remediation on a quarterly basis is recommended. Also recommended is the beginning of a monthly pumping episode at MW-6. This monthly remediation effort would start in October and November 1992. The effectiveness of this increased remediation effort will be evaluated in the December 1992 Quarterly Report and a decision whether to continue monthly pumping will be determined.

I declare under penalty of perjury, that to the best of our information and belief at the time the data was collected, the information and/or recommendations contained in the Quarterly Groundwater Monitoring Report are true and correct.

If you have any questions, please do not hesitate to call us at (510) 521-5200.

Sincerely,

Campbell McLeod
Supervising Geoscientist

Clifton Davenport, CEG #1455
Principal Hydrogeologist

STATE OF CALIFORNIA
CERTIFIED ENGINEERING GEOLOGIST #1455
CLIFTON W. DAVENPORT
REGISTERED GEOLOGIST

0805LCD1

could consider bladder pump to extract as wells fill -

1135 Atlantic Avenue, Alameda, CA 94501 (510) 521-5200 FAX (510) 521-1547

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JUNE 1992 QUARTERLY GROUNDWATER MONITORING AND INTERIM REMEDIATION REPORT FORMER ALAMEDA SERVICE STATION A-578 7608 AMADOR VALLEY BLVD. DUBLIN, CALIFORNIA

JULY 23, 1992

McLaren Hart™

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JUNE 1992 QUARTERLY GROUNDWATER MONITORING REPORT
FORMER ALAMEDA SERVICE STATION A-578
7608 AMADOR VALLEY BOULEVARD
DUBLIN, CALIFORNIA

INTRODUCTION

This letter report presents the June 1992 quarterly groundwater monitoring results at the former Alameda Service Station A-578 near Target store T-328, located at 7608 Amador Valley Boulevard in Dublin, California. This report represents the fourth episode of the current quarterly monitoring program. This report was prepared in accordance with McLaren/Hart's work plan entitled "Proposal and Cost Estimate to Conduct Quarterly Groundwater Sampling and Interim Remediation at the Target Store T-328 Dublin, California" dated September 4, 1991 and approved by the Alameda County Department of Environmental Health. The quarterly schedule for interim remediation was detailed in a letter entitled "Update of Schedule for Interim Groundwater Remediation at Former Target Store T-328 Dublin, California" dated November 15, 1991.

SCOPE OF WORK AND OBJECTIVES

The work associated with the June quarterly monitoring event included sampling six monitoring wells (MW-1 through MW-6) for petroleum-related hydrocarbons, and extraction of 400 gallons of impacted groundwater from monitoring well MW-6. A site location map is presented as Figure 1 and a site map showing monitoring well locations is included as Figure 2. Quarterly monitoring of the wells is being conducted to monitor the lateral extent of petroleum hydrocarbons in the shallow groundwater beneath the site, while the removal of groundwater from MW-6 serves as an interim remediation of impacted groundwater in the area of the former underground fuel tanks.

Groundwater Elevations

Groundwater surface elevations were measured prior to sampling and pumping activities on June 23, 1992, and are presented in Table 1 along with well construction details. This data was used to construct the June 1992 groundwater contour map, presented as Figure 2. The inferred groundwater flow direction is generally toward the east, varying locally to the southeast. This variation is a result of a slightly higher (0.02 ft) elevation of groundwater in the former tank excavation. This flow direction is consistent with the observed groundwater flow direction in March 1992. Based on the observed contour pattern, MW-2, MW-4 and MW-5 appear to be downgradient of the former excavation area.

The static depth to groundwater ranges from 4.92 to 6.70 feet below ground surface or 335.28 to 335.41 feet above mean sea level. The average hydraulic gradient is approximately 0.012 feet/foot. The June water level measurements indicate that groundwater levels have decreased in the six wells since the March 1992 quarterly sampling, ranging from 0.27 to

0.69 feet, with an average decrease of 0.39 feet. Historic groundwater elevation data are presented in Table 2.

Interim Remediation

Four interim remediation episodes have occurred at MW-6. The first groundwater remediation was conducted on October 17 and 18, 1991, shortly after MW-6 was constructed and the second was on December 30 and 31, 1991. The third interim remediation occurred on March 26 and 27, 1992, while the fourth episode occurred during this quarterly sampling event on June 23, and 24, 1992. The last three episodes occurred in conjunction with quarterly sampling.

During the first three episodes 220, 300 and 400 gallons of groundwater were respectively extracted from MW-6, at a average pumping rate of 0.67 gpm. Depth to groundwater was measured at the six wells during each day of interim remediation, once before pumping started then again just before pumping stopped for the day. As shown on Table 3, the extraction of groundwater from MW-6 decreases the water level in each of the six wells.

During June 1992 interim remediation, 400 gallons of groundwater were extracted at an average pumping rate of 0.63 gpm. Measurements presented on Table 3 reveal that water levels in MW-4 and MW-5 showed the greatest response to pumping (decreases of 0.25 and 0.16 feet, respectively) on the first day of this event. Measurements collected after the second day of pumping showed the most response in MW-4, MW-1 and MW-5 (decreases of 0.25 feet, 0.17 feet, and 0.16 feet, respectively).

Monitoring Well Sampling Protocol

Groundwater samples were collected at MW-1, MW-3, MW-5, and MW-2 on June 23, and at MW-4 and MW-6 on June 24, 1992. Prior to sampling MW-1 through MW-5, four casing volumes were purged from each well using a centrifugal pump. During purging, the temperature, pH, electric conductivity, and turbidity were measured after each casing volume was removed. After all parameters had stabilized, with the turbidity below 100 NTU's, sampling was performed using a disposable bailer. At MW-6, 65 casing volumes were removed prior to sample collection and parameters were collected during the last four of these casing volumes. Sampling event data sheets are inclosed as Attachment I.

The groundwater samples were stored in a container filled with ice and delivered to EnviroTest Laboratory, a state-certified laboratory located in Rancho Cordova, California. A chain-of-custody record was completed during sampling and accompanied each sample shipment to the laboratory. The samples were submitted for analysis by the California Department of Health (DHS) LUFT Manual Method for Total Petroleum Hydrocarbons as gasoline (TPH/G), and for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) analyses by EPA Method 8020. Trip blanks were included in the shipments to the laboratory to be analyzed for TPH/G and BTEX.

Monitoring Well Sampling Results

Table 4 and Figure 3 present the analytical results of the groundwater samples collected during the June 1992 sampling event. Water samples collected at monitoring wells MW-1, MW-3, MW-4 and MW-5 did not contain concentrations of either TPH/G or BTEX at or above the reporting limit. The highest concentrations of petroleum chemicals were detected in the sample from MW-6, which contained 1,500 ppb TPH/G, 220 ppb benzene, and 190 ppb ethylbenzene. Benzene was detected in groundwater samples from MW-2 at 9.5 ppb.

Analysis

For the first time in six sampling events, petroleum chemicals were not detected at MW-4. Concentrations of TPH/G at 500 ppb and benzene at 120 ppb had been detected at this well during March 1992 sampling. As shown on Table 4, variations in concentrations of petroleum compounds have been observed at this well between quarterly sampling events.

As shown on Table 4, the concentrations levels of chemicals detected at MW-6, while generally consistently with historic levels, seem to be decreasing overall. Benzene concentrations detected at MW-2 during June sampling represent the highest level (9.5 ppb) in six sampling events, but are also consistent with historic data. Prior to June 1992, benzene concentrations at MW-2 had ranged from 2.0 to 6.6 ppb.

The trip blank sample did not contain TPH/G or BTEX at concentrations at or above the reporting limits. The analytical data sheets and chain-of-custody records for the groundwater samples are included as Attachment II.

The DHS Maximum Contaminant Levels (MCLs) for the analyzed compounds in drinking water include: 1 ppb benzene; 680 ppb ethylbenzene; and 1,750 ppb total xylenes. The Federal MCL for toluene is 1,000 ppb (effective July 30, 1992). There is no state action level for TPH/G. Benzene is present in monitoring wells MW-6 and MW-2 in concentrations in excess of its MCL. However, groundwater beneath the site is reportedly not used for drinking water or other beneficial uses, and the MCL concentrations are presented only for purposes of comparison.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on data collected to date:

- No free-floating petroleum product was observed in any of the wells.
- For the first time in six sampling events petroleum chemicals were not detected at MW-4, installed adjacent to the former tank excavation.
- The analytical results from water samples collected at MW-6 less than previous results but generally consistent with historic levels of TPH/G,

benzene and ethylbenzene. Concentrations in the well appear to be decreasing overall, implying that the interim remediation at the well is having some effect.

- The highest concentration of benzene was detected at MW-2 during this sampling event. However, the detected level is still generally consistent with previous levels.

- As shown on Figure 2, the apparent groundwater flow direction at the site is generally to the east, locally varying to the southeast, consistent with historic flow directions.

- Groundwater elevations in the six wells have decreased an average of 0.39 feet since March 1992.

- Based on the analytical results from MW-3, no petroleum chemicals appear to be migrating in the groundwater beneath the site from off-site locations.

- Based on historical analytical results from downgradient wells MW-2 and MW-5, chemicals of concern do not appear to be migrating towards MW-5. However, benzene is present in groundwater at MW-2.

- The interim groundwater remediation at MW-6 has removed a total of 1,320 gallons of groundwater and appears to be capable of lowering water levels at other wells on-site. The highest responses to pumping at MW-6 are exhibited at MW-4, MW-5, and MW-1, although all wells on site appear to be influenced.

Based on the above conclusions, McLaren/Hart recommends the following:

- Continue the groundwater monitoring program on a quarterly basis for one year (September and December 1992, March and June 1993). Collect water level measurements at the six wells, however, sample only five of the six wells. Monitoring well MW-1 does not require additional sampling, as this well is cross gradient form the source area has not contained any petroleum hydrocarbons during six sampling events.

- The quarterly evacuation of groundwater from MW-6 appears to be effective in lowering concentrations of chemicals in this well. Therefore, this program should be continued during the next year of quarterly sampling. In addition, to evaluate a more aggressive approach to remediation of impacted groundwater, a monthly extraction program should be initiated. An additional 200 gallons should be extracted form the well each month between quarterly monitoring events during the first and second monitoring periods. Thus, the monthly groundwater extraction would be in October and November 1992.

The well will be sampled during the normal quarterly monitoring. The results will be evaluated for effectiveness and presented in the quarterly report. The second quarter report (December 1992) will present recommendations as to whether the monthly extraction program should be continued into 1993.

FIGURE 1
SITE LOCATION MAP
TARGET STORE T-328
DUBLIN, CA.

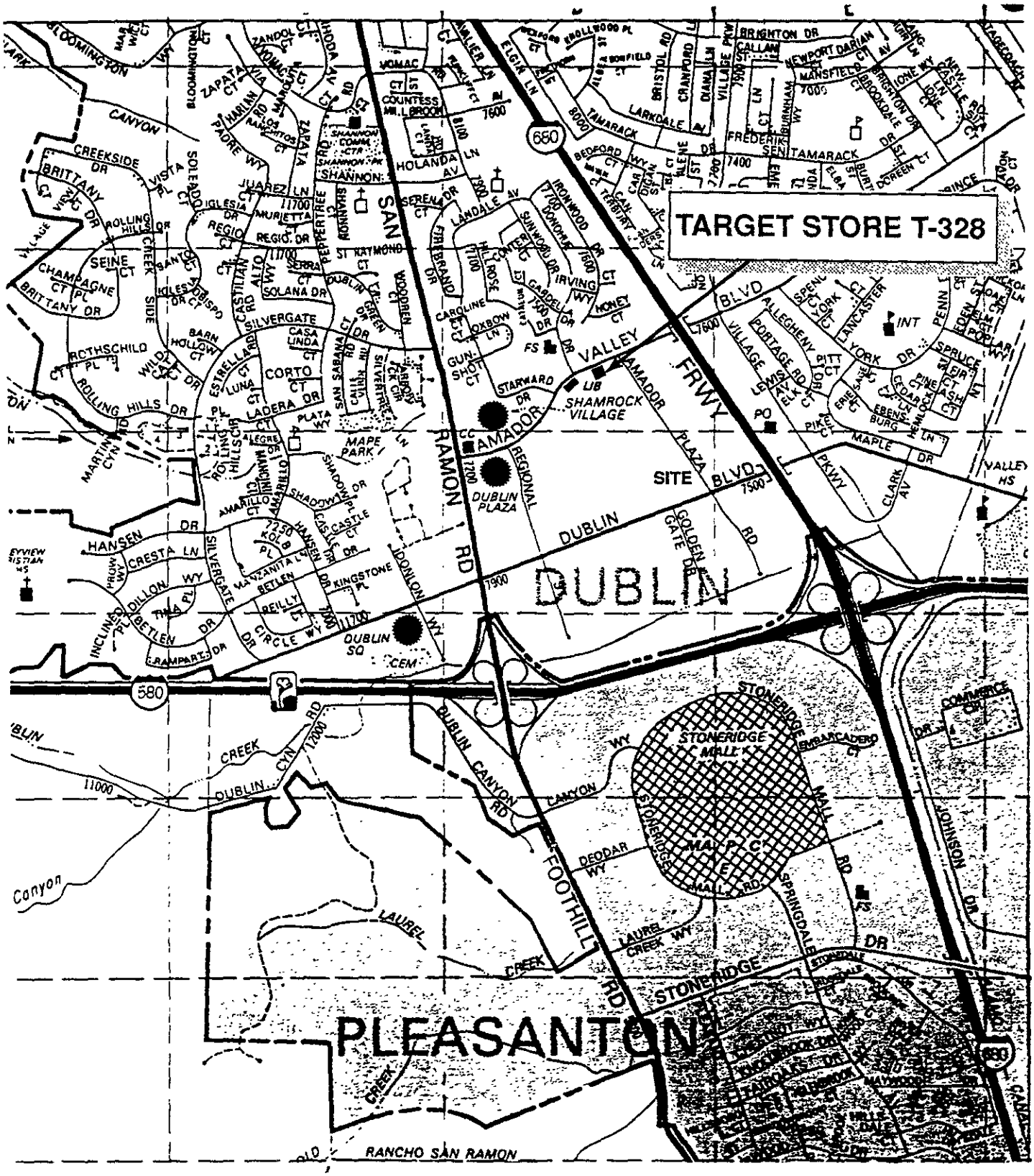

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FIGURE 2
GROUNDWATER CONTOUR MAP
JUNE 23, 1992
FORMER ALAMEDA SERVICE A-578
AMADOR VALLEY BOULEVARD

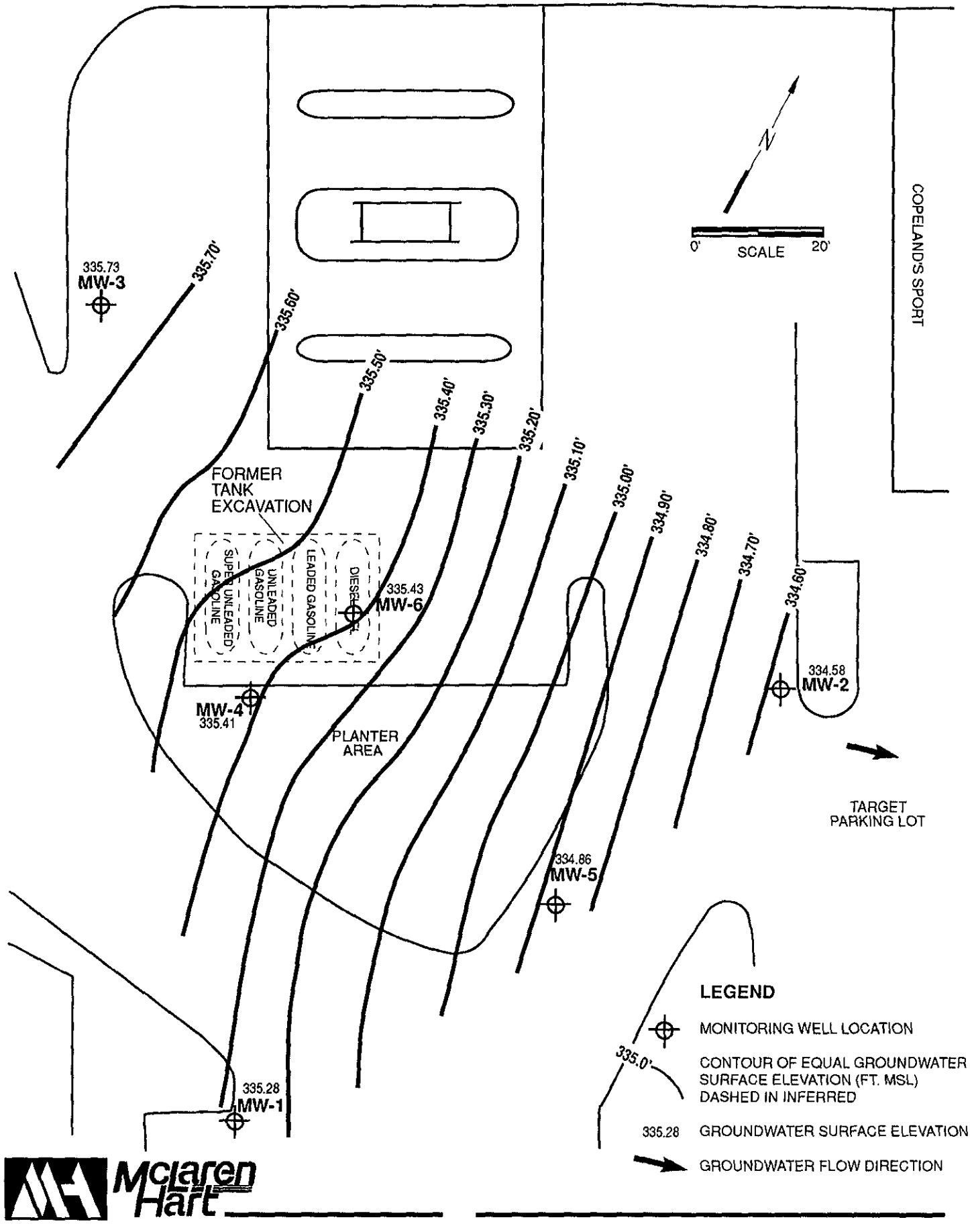

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FIGURE 3
GROUNDWATER MONITORING WELL
CHEMICAL CONCENTRATIONS
JUNE, 1992
FORMER ALAMEDA SERVICE STATION A-578
AMADOR VALLEY BOULEVARD

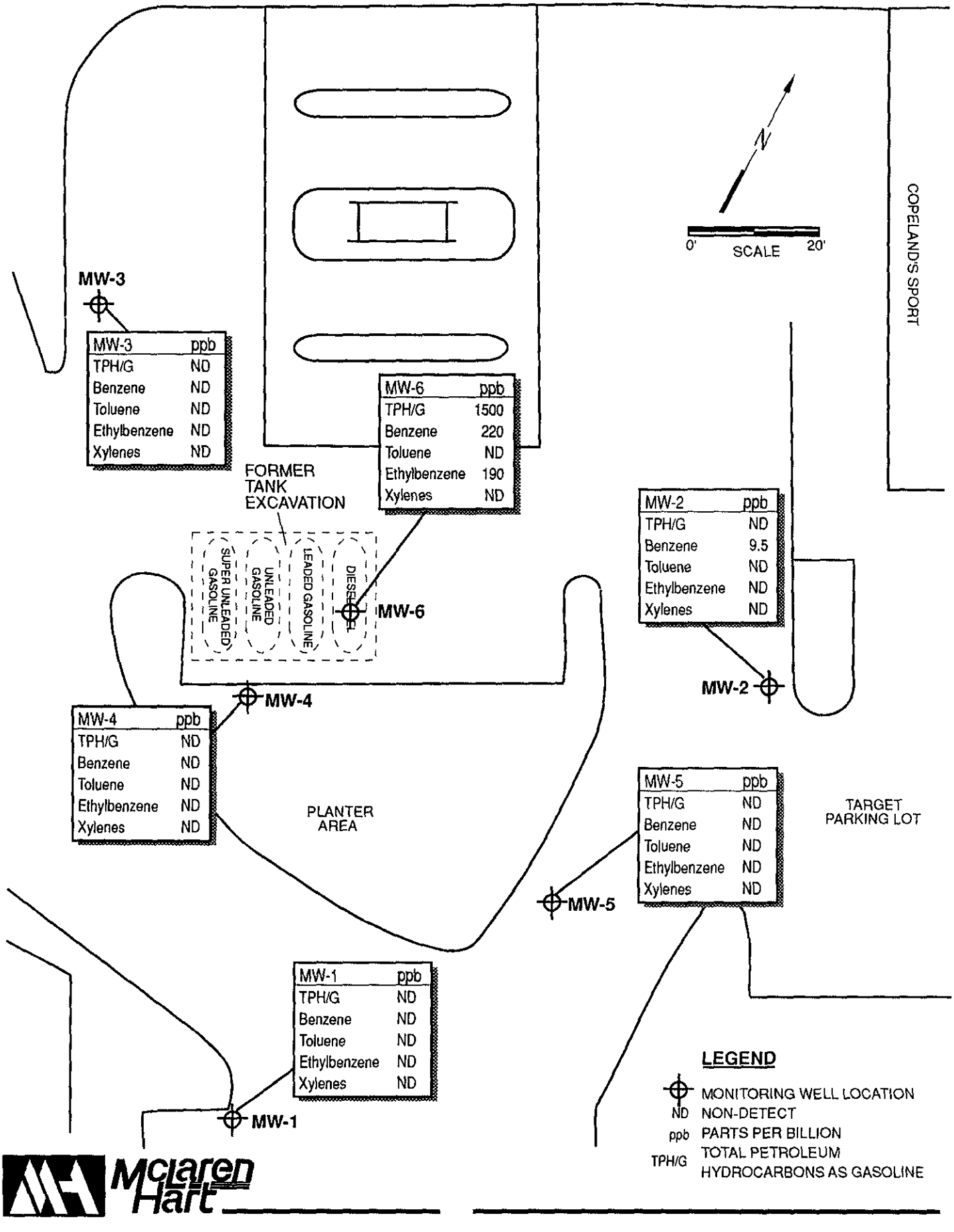

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TABLE 1

WELL CONSTRUCTION DETAILS AND GROUNDWATER SURFACE ELEVATIONS
ALAMEDA SERVICE STATION, A-578
DUBLIN, CALIFORNIA

WELL DESIGNATION	SCREENED INTERVAL (feet below grade)	GROUND SURFACE ELEVATION (MSL)*	SCREENED INTERVAL (MSL)	TOP OF CASING ELEVATION (MSL)	STATIC WATER LEVEL 6/23/92 (feet below grade)	GROUNDWATER ELEVATION 6/23/92 (MSL)
MW-1	5-20	340.30	335.30 - 320.30	340.20	4.92	335.28
MW-2	5-20	340.52	335.52 - 320.52	340.27	5.69	334.58
MW-3	5-20	341.67	336.67 - 321.67	341.00	5.27	335.73
MW-4	5-20	342.31	337.31 - 322.31	342.11	6.70	335.41
MW-5	5-20	340.52	335.52 - 320.52	340.0	5.23	334.86
MW-6	4.5-14.5	341.13	336.63-326.63	340.81	5.38	335.43

*Feet above mean sea level

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA
ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA

WELL I.D.	TOP OF CASING ELEVATION (MSL)*	DATE MEASURED	DEPTH TO WATER (ft)	WATER ELEVATIONS (MSL)	CHANGE SINCE LAST READING (ft)
MW-1	340.20	2/28/91	5.00	335.20	
		6/14/91	5.53	334.67	-0.59
		9/26/91	5.97	334.23	-0.38
		12/30/91	5.50	334.70	0.47
		3/26/92	4.65	335.55	0.85
		6/23/92	4.92	335.28	-0.27
MW-2	340.27	2/28/91	5.46	334.81	
		6/14/91	5.90	334.37	-0.44
		9/26/91	6.54	333.73	-0.64
		12/30/91	5.83	334.44	0.71
		3/27/92	5.35	334.92	0.48
		6/23/92	5.69	334.58	-0.34
MW-3	341.00	2/28/91	5.61	335.39	
		6/14/91	5.40	335.60	0.21
		9/26/91	6.29	334.71	-0.89
		12/30/91	5.75	335.25	0.54
		3/26/92	4.58	336.42	1.17
		6/23/92	5.27	335.73	-0.69
MW-4	342.11	2/28/91	7.01	335.10	
		6/14/91	7.01	335.10	0.00
		9/26/91	7.81	334.30	-0.80
		12/30/91	7.17	334.94	0.64
		3/27/92	6.44	335.67	0.73
		6/23/92	6.70	335.41	-0.26
MW-5	340.09	6/14/91	5.81	334.28	
		9/26/91	5.92	334.17	-0.11
		12/30/91	5.52	334.57	0.40
		3/26/92	4.80	335.29	0.72
		6/23/92	5.23	334.86	-0.43
MW-6	340.81	9/26/91	6.45	334.36	
		12/30/91	5.71	335.10	0.74
		3/27/92	5.03	335.78	0.68
		6/23/92	5.38	335.43	-0.35

* MSL = Mean Sea Level

TABLE 3

CHANGE IN GROUNDWATER ELEVATION AT MONITORING WELLS
DURING INTERIM REMEDIATION AT MW-6
ALAMEDA SERVICE STATION A-578
DUBLIN, CALIFORNIA

		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
DATE	TIME	Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change	Depth	Change
10-17-91	1000	6.19	---	6.74	---	6.40	---	7.96	---	6.28	---	6.65	---
	1600	6.24	-0.05	6.80	-0.06	6.59	-0.19	8.10	-0.14	6.45	-0.17	11.26	-4.61
10-18-91	0900	6.24	-0.05	6.82	-0.08	6.55	-0.15	8.04	-0.08	6.40	-0.12	6.72	-0.07
	1600	6.28	-0.09	6.84	-0.10	6.64	-0.24	8.13	-0.17	6.48	-0.20	12.80	-6.15
12-30-91	0800	5.50	---	5.83	---	5.75	---	7.17	---	5.52	---	5.72	---
12-31-91	1500	5.69	-0.19	6.00	-0.17	5.83	-0.08	7.29	-0.12	5.68	-0.16	7.36	-1.65
3/26/92	1000	4.65	---	5.35	---	4.58	---	6.44	---	4.80	---	5.03	---
	1500	4.82	-0.17	5.43	-0.08	5.01	-0.43	6.70	-0.26	5.15	-0.35	12.72	-7.69
3/27/92	0845	4.74	-0.09	5.41	-0.06	4.95	-0.37	6.52	-0.08	5.01	-0.21	5.10	-0.07
	1400	4.80	-0.15	5.48	-0.13	5.04	-0.46	6.72	-0.28	6.11	-1.31	13.12	-8.07
6/23/92	0930	4.92	---	5.69	---	5.27	---	6.70	---	5.23	---	5.38	---
	1830	5.04	-0.12	5.82	-0.13	5.38	-0.11	6.95	-0.25	5.39	-0.16	13.70	-8.32
6/24/92	0900	5.04	-0.12	5.76	-0.07	5.33	-0.06	6.84	-0.14	5.34	-0.11	5.48	-0.10
	1130	5.09	-0.17	5.79	-0.10	5.38	-0.11	6.95	-0.25	5.39	-0.16	9.77	-4.39

*NOTE: Changes in water elevation are measured from the initial depth to groundwater on 10/17/91, 12/30/91, or 3/26/92 and 6/23/92 Groundwater was pumped from MW-6 at approximately 0.63 GPM during June 1992.

TABLE 4

ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
ALAMEDA SERVICE STATION, A-578
DUBLIN, CALIFORNIA

WELL DESIGNATION	DATE	TPH/G	TPH/D	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
MW-1	2/91	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
MW-2	2/91	50	<0.5	2.0	0.8	1.1	5.8
	6/91	51	---	6.6	<0.5	1.1	1.33
	9/91	<50	---	5.0	<0.5	0.64	<0.5
	12/91	<50	---	6.1	<0.5	<0.5	<0.5
	3/92	<50	---	3.6	<0.5	<0.5	<0.5
	6/92	<50	---	9.5	<0.3	<0.3	<0.3
MW-3	2/91	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
MW-4	2/91	6,000	<0.5	680	<20	160	250
	6/91	6,100	---	680	<25	150	<25
	9/91	<50	---	100	<0.5	45	8.1
	12/91	180	---	6.4	<1.0	16	25.8
	3/92	560	---	120	6.0	5.0	<0.5
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
MW-5	6/91	<50	---	<0.5	<0.5	<0.5	<0.5
	9/91	<50	---	<0.5	<0.5	<0.5	<0.5
	12/91	<50	---	<0.5	<0.5	<0.5	<0.5
	3/92	<50	---	<0.3	<0.3	<0.3	<0.3
	6/92	<50	---	<0.3	<0.3	<0.3	<0.3
MW-6	9/91	2,300	---	760	11	360	236
	10/91	1,900	---	230	<5	140	12.1
	12/91	2,500	<0.5	360	<50[a]	260	<50[a]
	3/92	2,600	<0.5	400	<50[a]	280	<50[a]
	6/92	1,500	---	220	<3[b]	190	<3[b]

a = The analysis was run at a 1:100 dilution to bring target analytes within linear working range of the GC.
b = The analysis was run at a 1:10 dilutions to bring target analytes within linear working range of the GC.
--- = Not analyzed.

ATTACHMENT 1

JUNE EVENT

McLaren

HYDRODATA

DATE: 6/23/92

PROJECT: TARGET DUBLIN EVENT: QUARTERLY SAMPLER: D. WATTS

NO.	WELL OR LOCATION	DATE MO	DA	YR	TIME HR	MIN	MEASUREMENT	CODE	COMMENTS
1	MW-1	6	23	92	09	34	4.92	SWL	1" STANDING H_2O IN VAULT BOX
2	MW-3				09	41	5.27		
3	MW-5				09	47	5.23		
4	MW-2				09	51	5.69		
5	MW-4				09	56	6.70		
6	MW-6	↓	↓	↓	09	59	5.38	↓	
7	MW-1	6	23	92	18	37	5.04	SWL	
8	MW-3				18	40	5.38		
9	MW-5				18	42	5.39		
10	MW-2				18	44	5.82		
11	MW-4				18	46	6.95		
12	MW-6	↓	↓	↓	18	50	≈ 13.70	↓	Pump Running
13									
14									
15									
16									
17									
18									
19									
20									

CODES:

- *SWL - Static Water Level (Feet)
- *IWL - Instant Water Level; Non-Static (Feet)
- *OIL - Oil Level (Feet)
- *OWI - Oil/Water Interface (Feet)
- *MTD - Measured Total Depth (Feet)
- FLO - Flow Rate (Gallons/Minute)
- CUM - Cumulative (Gallons)
- HRS - Total (Hours)
- PSI - Pressure (psi)²
- pH - 1 to 14
- Ec - Conductivity (µm HOS)
- TMP - Temperature (°C)
- TRB - Turbidity (NTU)
- ___ - _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: properly labeled, locked, or able to be locked. Describe corrective action.

Note flooding of vault box, odor, access problems.

¹Negative pressure (Vacuum) psi ≈ approx -(1/2 x mmHg)

McLaren

HYDRODATA

DATE: 6/24/92

PROJECT: TARGET DUBLIN EVENT: QUARTERLY SAMPLER: D. WATTS

NO.	WELL OR LOCATION	DATE MO	DATE DA	DATE YR	TIME HR	TIME MIN	MEASUREMENT	CODE	COMMENTS
1	MW-1	6	24	92	08	51	5.04	SWL	
2	MW-3				08	54	5.33		
3	MW-5				08	57	5.34		
4	MW-2				09	01	5.76		
5	MW-4				09	05	6.84		
6	MW-6				09	11	5.48		
7	MW-1	6	24	92	11	33	5.09	SWL	
8	MW-3				11	37	5.38		
9	MW-5				11	40	5.39		
10	MW-2				11	43	5.79		
11	MW-4				11	46	6.95		
12	MW-6				11	48	9.77		PUMP RUNNING.
13									DUBLIN RECEIVED
14									RAINFALL ON THE
15									NIGHT OF 6/23/92.
16									
17									DOLPHIN LOCKS SHOULD
18									PROBABLY BE REPLACED
19									WITH MORE DURABLE PSIGS.
20									

CODES:

- *SWL - Static Water Level (Feet)
- *IWL - Instant Water Level; Non-Static (Feet)
- *OIL - Oil Level (Feet)
- *OWI - Oil/Water Interface (Feet)
- *MTD - Measured Total Depth (Feet)
- FLO - Flow Rate (Gallons/Minute)
- CUM - Cumulative (Gallons)
- HRS - Total (Hours)
- PSI - Pressure (psi)[2]
- pH - 1 to 14
- Ec - Conductivity (µm HOS)
- TMP - Temperature (°C)
- TRB - Turbidity (NTU)
- ___ - _____ (Additional Code)

*All levels are depth from inner casing - describe any other reference points in comments column; when in doubt, describe reference point.

Note in comments column if well is not: property labeled, locked, or able to be locked. Describe corrective action.

Note flooding of vault box, odor, access problems.

[2]Negative pressure (Vacuum) psi = approx -(1/2 x mmHg)

SAMPLING EVENT DATA SHEET

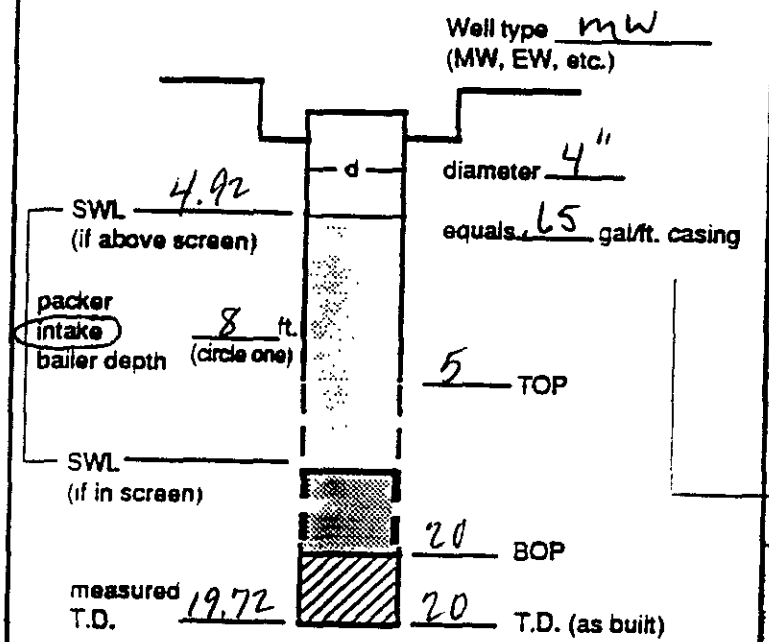
(fill out completely)

McLaren

WELL OR LOCATION MW-1

PROJECT TARGET DRUM EVENT Quarterly SAMPLER D. WATT DATE 6/23/97

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1132	1 GPM	
	1142	1 GPM	6.98
	1152	1 GPM	7.35
	1202	1 GPM	7.80
	1212	1 GPM	7.86
Stop	1215		
Sampled	1230		5.69
(Final IWL)			

Purge calculation

.65 gal/ft. * 15.08 ft. = 9.81 gals x ~~3~~ 4 sw = 40 ~~30~~ sw gals.

SWL to BOP or packer to BOP — one volume — purge volume- 3 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. PUMP W DISP. BAILER

USED DESIGN T.D. FOR PURGE CALCULATION

50% RECOVERY: 12.46 80% RECOVERY: 7.94

Additional comments:

SAMPLE TURBIDITY: 0.26

Actual gallons purged 40+

Actual volumes purged 4+

Well yield ⊕ (see below) HY/MY

COC # C00337

Sample I.D.	Analysis	Lab
21265I-54	TPH/G + BTEX	MAL

Gallons purged *	TEMP °C / (F) (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 10	70.8	727	7.45	5.64		
2. 20	68.9	589	7.22	4.81		
3. 30	70.1	593	7.21	8.46		
4. 40	69.7	574	7.19	2.32		
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop — MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. — LY - Able to purge 3 volumes by returning later or next day. — VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

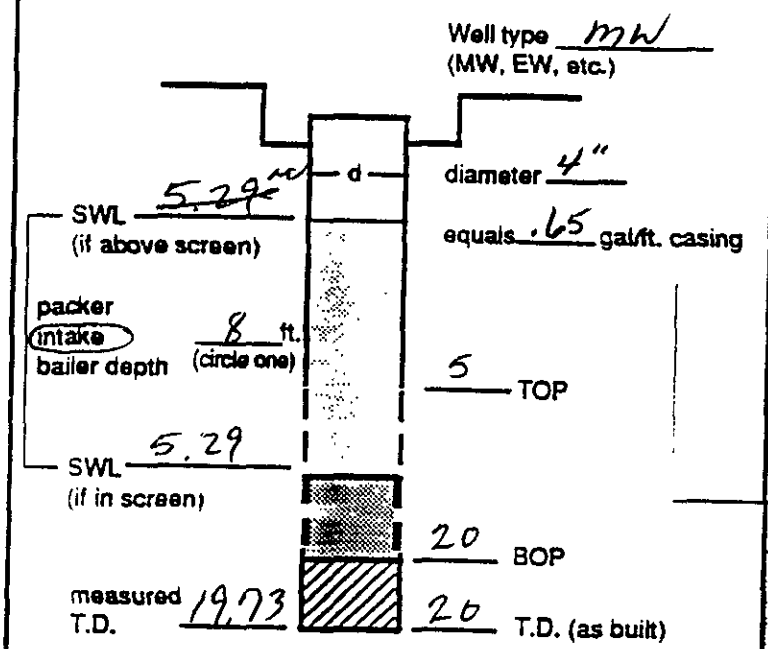
(fill out completely)

McLaren

WELL OR LOCATION MW-3

PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/23/92

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1345	.5 GPM	
	1405	.5 GPM	7.42
	1425	.5 GPM	7.51
	1445	.5 GPM	7.55
	1505	.5 GPM	7.60
Stop	1506		
Sampled	1510		5.80
(Final IWL)			

Purge calculation

.65 gal/ft. * 14.71 ft. = 9.56 gals x 3/4 = 40 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

Head purge calculation (Airlift only)

_____ gal/ft. * _____ ft. = _____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. PUMP (W) DISP. BAILER

USED DESIGN T.D. FOR PURGE CALCULATION

Actual gallons purged 40+

Actual volumes purged 4+

Well yield (see below) ⊕ MY

COC # 000337/000369

50% RECOVERY: 12.65 80% RECOVERY: 8.24

Additional comments:

SAMPLE TURBIDITY: 2.04

Sample I.D.	Analysis	Lab
212655-5B	TPH/G + BTEX (LW ET)	MAL

Gallons purged *	TEMP °C (°F) (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 10	72.1	575	7.28	5.61		
2. 20	71.3	553	7.32	5.36		
3. 30	72.5	560	7.37	6.03		
4. 40	72.7	532	7.32	4.85		
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop | MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. | LY - Able to purge 3 volumes by returning later or next day. | VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

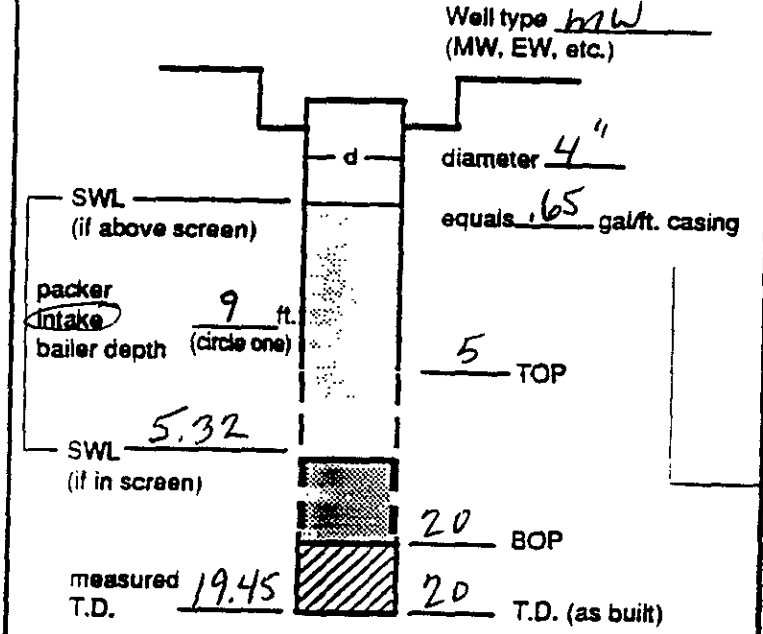
(fill out completely)

McLaren

WELL OR LOCATION MW-5

PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/23/92

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1545	1.5 GPM	
	1555	1 GPM	7.9
	1605	1 GPM	8.41
	1615	1 GPM	8.40
	1625	1 GPM	8.63
Stop	1627		
Sampled	1630		5.85
(Final IWL)			

Purge calculation

.65 gal/ft. * 14.68 ft. = 9.55 gals x 3 (4) = 40 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. PUMP @ DISP. BAILER

USED DESIGN T.D. FOR PURGE CALCULATION

50% RECOVERY: 12.66 80% RECOVERY: 8.26

Additional comments:

SAMPLE TURBIDITY: 0.11

Actual gallons purged 40+

Actual volumes purged 4+

Well yield ⊕ (see below) HY/MY

COC # 000369

Sample I.D.	Analysis	Lab
212659-62	TPH/G & BTEX	MAL

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 10	70.2	513	7.40	8.53		
2. 20	68.5	495	7.39	6.88		
3. 30	70.3	501	7.41	5.65		
4. 40	69.5	489	7.46	2.66		
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop | MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. | LY - Able to purge 3 volumes by returning later or next day. | VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

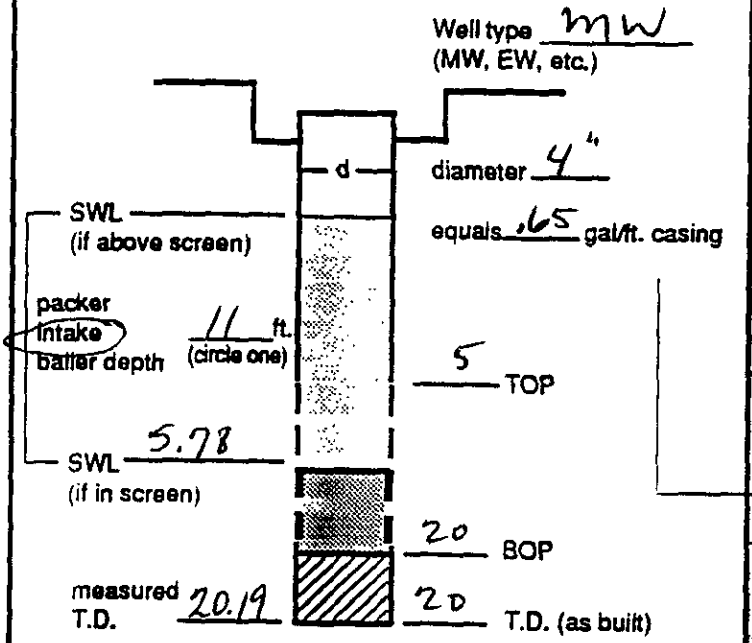
(fill out completely)

McLaren

WELL OR LOCATION MW-2

PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/23/92

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1705	1 GPM	
	1715	1 GPM	7.25
	1725	1 GPM	9.34
	1735	1 GPM	9.83
	1745	1 GPM	10.04
Stop	1747		
Sampled	1750		7.33
(Final IWL)			

Purge calculation

.65 gal/ft. * 14.41 ft. = 9.37 gals x 4 = 40 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. PUMP @ DISP. BAILER

USED MEASURED T.D. FOR PURGE CALCULATION

50% RECOVERY: 12.99 80% RECOVERY: 8.67

Additional comments:

SAMPLE TURBIDITY: 1.18

Actual gallons purged 40+

Actual volumes purged 4+

Well yield ⊕ (see below) HY/MY

COC # 000369

Sample I.D.	Analysis	Lab
~~212662-68~~ MW		
212663-66	TPH/G (LUFT) + BTEX	MAL

Gallons purged *	TEMP °C / (F) (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 10	72.5	572	7.47	3.69		
2. 20	72.3	527	7.49	2.09		
3. 30	73.4	527	7.58	4.12		
4. 40	72.8	518	7.52	3.94		
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop | MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump. | LY - Able to purge 3 volumes by returning later or next day. | VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

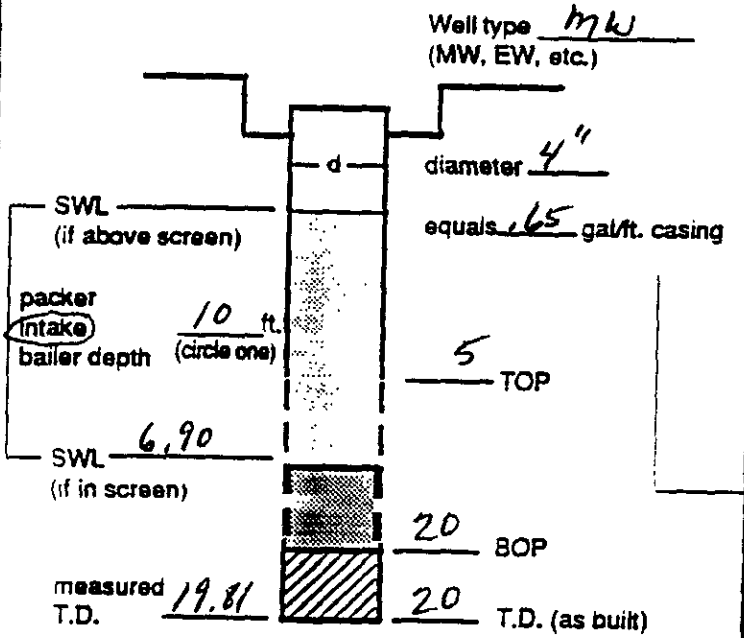
(fill out completely)

McLaren

WELL OR LOCATION MW-4

PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/24/92

Well / Hydrologic statistics



Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	0956	1 GPM	
	1005	1 GPM	9.82
	1014	1 GPM	9.31
	1023	1 GPM	8.99
	1032	1 GPM	8.91
Stop	1035		
Sampled	1045		7.88
(Final IWL)			

Purge calculation

.65 gal/ft. * 13.1 ft. = 8.52 gals x 4 = 35 gals.

SWL to BOP or packer to BOP | one volume | purge volume- 3 casings

Head purge calculation (Airlift only)

____ gal/ft. * ____ ft. = ____ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. PUMP W/ DISP. BAILER

USED DESIGN T.D. FOR PURGE CALCULATION

Actual gallons purged 36+

Actual volumes purged 4+

Well yield (see below) ⊕ HY/MY

50% RECOVERY: 13.45 80% RECOVERY: 9.52

Additional comments:

SAMPLE TURBIDITY: 0.61

COC # 000370

Sample I.D.	Analysis	Lab
212667-70	TPH/G + BTEX (LUFT)	MML

Gallons purged *	TEMP °C (°F) (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)		
1. 9	65.7	447	7.63	1.91		
2. 18	64.9	442	7.60	1.46		
3. 27	67.4	453	7.64	1.62		
4. 36	66.6	434	7.56	0.73		
5.						

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to purge 3 volumes by returning later or next day.

VLY - Minimal recharge - unable to purge 3 volumes.

SAMPLING EVENT DATA SHEET

(fill out completely)

McLaren

WELL OR LOCATION MW-6

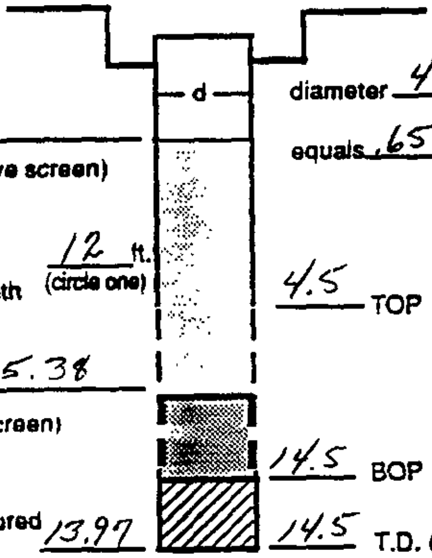
PROJECT TARGET DUBLIN EVENT Quarterly SAMPLER D. WATTS DATE 6/23/92

Well / Hydrologic statistics

Well type 4" MW
(MW, EW, etc.)

diameter 4"

equals .65 gal/ft. casing



SWL (if above screen)

packer / intake / bailer depth (circle one) 12 ft.

4.5 TOP

SWL 5.38 (if in screen)

14.5 BOP

measured T.D. 13.97

14.5 T.D. (as built)

Action	Time	Pump rate	IWL (low yield)
Start pump / Begin	1015	.875 GPm	12.8
			WHILE
			PumPING
	1020	.5 GPm	
STOP	1900		325 GAL PURG
* (6/24/92) START	0920	.75 GPm	
Stop	1155		
Sampled	1225		5.69
(Final IWL)			

Purge calculation

(.65) 9.12" gal/ft. * 9.12 ft. = 5.93 gals x 3 = ______ gals.

SWL to BOP or packer to BOP — one volume — purge volume-3 casings

Head purge calculation (Airlift only)

______ gal/ft. * ______ ft. = ______ gals.

packer to SWL

Equipment Used / Sampling Method / Description of Event:

CENT. Pump USED to PURGE.
Disp. BAILER USED to SAMPLE.
USED DESIGN TO FOR PURGE CALCULATION.

50% RECOVERY: 9.94 80% RECOVERY: 7.21

Actual gallons purged 420+

Actual volumes purged 70+

Well yield ⊕ (see below) MY

COC # 000370

Sample I.D.	Analysis	Lab
212671-74	TPH/G + BTEX	MAI

Additional comments:

* 2-DAY EVENT

SAMPLE TURBIDITY: 1.37

Gallons purged *	TEMP °C / °F (circle one)	EC (µs / cm)	PH	TURBIDITY (NTU)
1. 350	71.4	469	7.87	4.59
2. 370	73.8	417	7.48	3.39
3. 390	75.7	382	7.49	3.55
4. 420	79.7	418	7.51	4.39
5.				

* Take measurement at approximately each casing volume purged.

⊕ HY- Minimal W.L. drop

MY - WL drop - able to purge 3 volumes during one sitting by reducing pump rate or cycling pump.

LY - Able to pur[illegible] volumes b[illegible] later or next day.

ATTACHMENT II

McLaren™ Hart

Date: July 6, 1992
LP #: 6132

Campbell McLeod
McLaren/Hart
1135 Atlantic Avenue
Alameda, CA 94501

Dear Mr. McLeod:

Enclosed are the laboratory results for the seven samples submitted by you to the McLaren Analytical Laboratory on June 25, 1992, for the project *Target Dublin*.

The analysis you requested is:

Modified EPA 8020 (BTEX) and TPH/G (7 - Water)

The report consists of the following sections:

1. A copy of the Chain-of-Custody
2. Quality Control Definitions and Report
3. Abbreviations and Comments
4. Analytical results
5. Copy of final billing submitted to accounting.

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing McLaren Analytical Laboratory. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,

Anthony S. Wong, Ph.D.
for Director, Laboratory/Managing Principal

3083 Gold Canal Drive, Rancho Cordova, CA 95670 (916) 852-6600 FAX (916) 852-7292

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QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS: A method blank (MB) is a laboratory generated sample free of any contamination. The method blank assesses the degree to which the laboratory operations and procedures cause false-positive analytical results for your samples.

LABORATORY CONTROL SPIKES

The LCS Program:

The laboratory control spike is a well-characterized matrix (organic pure type II water for water samples and contamination-free sand for soil samples) which is spiked with certain target parameters, and analyzed in duplicate at approximately 5% of the sample load, in order to assure the accuracy and precision of the analytical method.

Control limits for accuracy and precision are different for different methods and may vary with the different sample matrices. They are based on laboratory average historical data and EPA limits which are approved by the Quality Assurance Department.

(DC5-CN6132)

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QUALITY CONTROL REPORT

METHOD BLANK

Method: Mod. EPA 8020 (BTEX) & TPH/G Date Analyzed: 06/30/92
Units: ug/L (ppb)

Compound	Reporting Limit	Results of the MB
Benzene	0.30	BRL
Toluene	0.30	BRL
Ethyl Benzene	0.30	BRL
1,2-Xylene	0.30	BRL
1,3-Xylene	0.30	BRL
1,4-Xylene	0.30	BRL
Total Petroleum Hydrocarbons - Gasoline	50.	BRL

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QUALITY CONTROL REPORT

METHOD BLANK

Method: Mod. EPA 8020 (BTEX) & TPH/G Date Analyzed: 07/01/92
Units: ug/L (ppb)

Compound	Reporting Limit	Results of the MB
Benzene	0.30	BRL
Toluene	0.30	BRL
Ethyl Benzene	0.30	BRL
1,2-Xylene	0.30	BRL
1,3-Xylene	0.30	BRL
1,4-Xylene	0.30	BRL
Total Petroleum Hydrocarbons - Gasoline	50.	BRL

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McLaren Analytical Laboratory
Spike/Spike Duplicate Recovery
Method 8020

LP#: 6132

Analyst: AMP

Batch #: NA

Date Of Analysis: 06/26/92

Spike Sample ID: LCS/LCSD-W-13

Column: DB WAX

Spike ID Code: W-1-448

Instrument #: 6

Surrogate ID Code: W-1-534

Matrix: Water Units: ug/L

EPA METHOD	COMPOUNDS	(a) SAMPLE CONC.	(b) SPIKE CONC.	(c) SAMPLE + SPIKE CONC.	(d) SPIKE REC.%	(e) SAMPLE DUP. + SPIKE CONC.	(f) SPIKE DUP. REC. %	(g) RPD%	ACCEPTANCE LIMITS % REC.	ACCEPTANCE LIMITS RPD
8020	Chlorobenzene	0	4.0	4.0	100	3.8	95	5	80 - 120	≤20
8020	Benzene	0	4.0	3.8	95	3.8	95	0	80 - 120	≤20
8020	Ethyl Benzene	0	4.0	3.9	98	3.6	90	8	80 - 120	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

EPA METHOD	SURROGATE COMPOUNDS	DET.	(h) SUR. SPIKE CONC.	(i) SAMPLE + SUR. SPIKE CONC.	(j) SUR. REC. %	(k) SAMPLE DUP. + SUR.SPIKE CONC.	(l) SUR. DUP. RECOVERY %	ACCEPTANCE LIMITS % REC.
8020	a,a,a,-Trifluorotoluene	PID	4.0	3.8	95	4.1	102	80 - 120

Surrogate % Recovery = j = (i/h) x 100
Surrogate Dupe % Recovery = l = (k/h) x 100

Comments:

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McLaren Analytical Laboratory
Spike/Spike Duplicate Recovery
Total Petroleum Hydrocarbons/TPH-Gasoline

Analyst: AMP LP#: 6132

Date of Analysis: 06/26/92 Spike Sample ID: LCS/LCSD-W-12

Column: DB 624 Spike ID Code: W-1-518

Instrument #: 6 Surrogate ID Code: W-1-534

Batch #: NA Matrix: Water Units: ug/L

COMPOUNDS	(a) SAMPLE CONC.	(b) SPIKE CONC.	(c) SAMPLE + SPIKE CONC.	(d) SPIKE REC. %	(e) SAMPLE DUP. + SPIKE CONC.	(f) SPIKE DUP. REC. %	(g) RPD %	ACCEPTANCE LIMITS % REC.	ACCEPTANCE LIMITS RPD
Gas	0	100.	94.	94	94.	94	0	80 - 120	≤20

Spike Recovery = d = ((c-a)/b) x 100
Spike Duplicate Recovery = f = ((e-a)/b) x 100
Relative Percent Difference = g = (|c-e|)/((c+e) x .5) x 100

SURROGATE COMPOUNDS	(h) SURROGATE SPIKE CONC.	(i) SAMPLE + SURROGATE SPIKE CONC.	(j) SURROGATE RECOVERY %	ACCEPTANCE LIMITS % REC.
a,a,a-Trifluorotoluene	4.0	3.6	90	80 - 120

Surrogate % Recovery = j = (i/h) x 100

Comments:

tphg.w91

McLaren Hart™

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ABBREVIATIONS USED IN THIS REPORT

BRL	Below Reporting Limit
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
LCS	Laboratory Control Spike
LCSD	Laboratory Control Spike Duplicate
RPD	Relative Percent Difference
NS	Not Specified
NA	Not Applicable

COMMENTS

Test methods may include minor modifications of published EPA methods (e.g., reporting limits or parameter lists). Reporting limits are adjusted to reflect dilution of the sample when appropriate. Solids and waste are analyzed with no correction made for moisture content.

The reporting limits for BTEX meet those specified in the California LUFT Manual.

Values for total petroleum hydrocarbons gasoline were calculated based only on detected peaks.

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name:	Target Dublin	Project Number:	04-0122606-000
Sample Description:	Trip Blank	Lab Project-ID Number:	6132-001
Sample Number:	217047	Date Sampled:	06/23/92
Date Received:	06/25/92	Date Analyzed:	06/30/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	98	80 - 120
a,a,a-Trifluorotoluene (FID)	100	80 - 120

Dilution: None

Comments:

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

070191

McLaren Hart™

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name:	Target Dublin	Project Number:	04-0122606-000
Sample Description:	MW-1	Lab Project-ID Number:	6132-002
Sample Number:	212651	Date Sampled:	06/23/92
Date Received:	06/25/92	Date Analyzed:	06/30/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	110	80 - 120
a,a,a-Trifluorotoluene (FID)	105	80 - 120

Dilution: None

Comments:

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

070191

McLaren Hart™

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04-0122606-000

Sample Description: MW-3

Lab Project-ID Number: 6132-003

Sample Number: 212656

Date Sampled: 06/23/92

Date Received: 06/25/92

Date Analyzed: 07/01/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	95	80 - 120
a,a,a-Trifluorotoluene (FID)	95	80 - 120

Dilution: None

Comments:

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

070191

McLaren Hart™

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04-0122606-000

Sample Description: MW-5

Lab Project-ID Number: 6132-004

Sample Number: 212660

Date Sampled: 06/23/92

Date Received: 06/25/92

Date Analyzed: 07/01/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	92	80 - 120
a,a,a-Trifluorotoluene (FID)	95	80 - 120

Dilution: None

Comments:

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04-0122606-000

Sample Description: MW-2

Lab Project-ID Number: 6132-005

Sample Number: 212665

Date Sampled: 06/23/92

Date Received: 06/25/92

Date Analyzed: 07/02/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	9.5 (a)	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	88	80 - 120
a,a,a-Trifluorotoluene (FID)	90	80 - 120

Dilution: None

Comments: (a) The data was reported from a different analytical run on 07/02/92 for which the associated standard was within daily calibration criteria.

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name: Target Dublin

Project Number: 04-0122606-000

Sample Description: MW-4

Lab Project-ID Number: 6132-006

Sample Number: 212667

Date Sampled: 06/24/92

Date Received: 06/25/92

Date Analyzed: 06/30/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	BRL	0.30
Toluene	BRL	0.30
Ethyl Benzene	BRL	0.30
1,2-Xylene	BRL	0.30
1,3-Xylene	BRL	0.30
1,4-Xylene	BRL	0.30
Total Petroleum Hydrocarbons - Gasoline	BRL	50.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	92	80 - 120
a,a,a-Trifluorotoluene (FID)	135 (a)	80 - 120

Dilution: None

Comments: (a) Sample surrogate recovery is beyond acceptance limits. All other quality control is acceptable.

Non-target analytes are present on the chromatograph.

Approved By: Nancy McDonald Lorem Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

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VOLATILE AROMATIC COMPOUNDS

Analytical Method: Modified EPA 8020 (BTEX) and Total Petroleum Hydrocarbons Gasoline by LUFT
Preparation Method: EPA 5030

Project Name:	Target Dublin	Project Number:	04-0122606-000
Sample Description:	MW-6	Lab Project-ID Number:	6132-007
Sample Number:	212672	Date Sampled:	06/24/92
Date Received:	06/25/92	Date Analyzed:	07/01/92

COMPOUND	ANALYTE CONCENTRATION ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Benzene	220. (a)	30.
Toluene	BRL	3.0
Ethyl Benzene	190. (b)	30.
1,2-Xylene	BRL	3.0
1,3-Xylene	BRL	3.0
1,4-Xylene	BRL	3.0
Total Petroleum Hydrocarbons - Gasoline	1500.	500.

Surrogates	Percent Recovery	Acceptance Limits
a,a,a-Trifluorotoluene (PID)	80	80 - 120
a,a,a-Trifluorotoluene (FID)	145 (c)	80 - 120

Dilution: A 10 fold dilution was required to quantitate target analyte due to the presence of non-target analyte interferences.

Comments: (a) The data was reported from a different analytical run on 07/01/92 at a 100 fold dilution for which the associated standard was within daily calibration criteria.

(b) The data was reported from a different analytical run on 07/01/92 at a 100 fold dilution to obtain a result within linear range.

(c) Sample surrogate recovery is beyond acceptance limits. All other quality control is acceptable.

Approved By: Nancy McDonald for CM Date: 7-7-92
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.

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CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project No: 6132
Storage Refrigerator ID: 1
Storage Freezer ID:
Secured: Yes / No

Project Name: TARGET DUBLIN Project #: 04.0122606.000 Sampler: D. WATTS (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) D. WATTS	Received by: (Signature and Printed Name) FED-X	Date: 6/24/92	Time: PM
Relinquished by (Signature and Printed Name) Fed Ex	Received by: (Signature and Printed Name) Kathleen Fontecilla	Date: 6-25-92	Time: 09:00
Relinquished by: (Signature and Printed Name)	~~Received by: (Signature and Printed Name)~~ Logged By	Date: 6-26-92	Time: 08:00
Relinquished by (Signature and Printed Name)	Received by: (Signature and Printed Name) Kathleen Fontecilla	Date:	Time:

SHIP TO:
McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670
(916) 638-3696
FAX (916) 638-2842

Method of Shipment: FED-X

Shipment ID:

Circle or Add Analysis(es) Requested

MTL#1 Cd, Cr, Cu, Hg, Pb, Ni, Zn | MTL#2 Cd, Cr, Cu, Pb, Ni, Zn | Explosives | Org Hg / Org Pb | Cr VI / Nitrates / Nitrites | 602 / 8020 | 608 / 8080 | 610 / 8100 | 625 / 8270 | ~~TPH/G~~ TPH/G (LUFT) & BTEX (LUFT) | Sieve / TOC | Moisture / Density | Chloride / pH | Selected Metals Based on TTLC | Selected Metals Based on pH and SEC | TDS 160.1 / Hardness 242.1 | Ammonia-330 / Sulfate-376 | Title 22 / Metals | Alkalinity 310.1 / Formaldehyde

a) Identify specific metals requested under Special Instructions

	Sample ID Number	Sample Description: Date	Time	Description	TAT	Container(s): #	Type	FOR LABORATORY USE ONLY: Lab ID
1	217049	6/23/92	1050	TRIP BLANK	4	1	V (HCl)	6132-001
2	217048			(SPARE)				
3	217049							
4	217050							-002
5	212651		1230	MW-1				
6	212652			(SPARE)				
7	212653							
8	212654							
9	212655		1510	MW-3				-003
10	212656			(SPARE)				

Special Instructions/Comments:
TPH/G (LUFT) & BTEX (LUFT) ON ALL SAMPLES

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

TAT (Analytical Turn-Around Times) 1 = 24 hours 2 = 48 hours 3 = 1 week 4 = 2 weeks
Container Types: B=Brass Tube, V=VOA Vial, A=1-Liter Amber, G=Glass Jar, C=Cassette, O = Other

SEND DOCUMENTATION AND RESULTS TO (Check one):
☒ Project Manager/Office: C. McLEOD / ALAMEDA
☐ Client Name:
Company:
Address:
Phone: ( ) Fax:

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Samples intact, temp OK (X-3) Sample 217050 Contains Air bubbles. 6/26/92 (X-3)

McLaren Hart

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project No.: 6132
Storage Refrigerator ID: 1
Storage Freezer ID:
Secured. Yes ✓ No

Project Name: TARGET DUBLIN Project #: 04.0122606.000 Sampler: D. WATTS (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name)	D. WATTS	Received by: (Signature and Printed Name)	FED-X	Date: 6/24/92 Time: PM
Relinquished by: (Signature and Printed Name)	Fed Ex	Received by: (Signature and Printed Name)	Kathleen Fonteilla	Date: 6-25-92 Time: 09:00
Relinquished by: (Signature and Printed Name)		Received by: (Signature and Printed Name)	Logged By Kathleen Fonteilla	Date: 6-26-92 Time: 08:00
Relinquished by: (Signature and Printed Name)		Received by: (Signature and Printed Name)		Date: Time:

SHIP TO:
McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670
(916) 638-3696
FAX (916) 638-2842

Method of Shipment: FED-X
Shipment ID:

Circle or Add Analysis(es) Requested

MTL#1 Cd, Cr, Cu, Hg, Pb, Ni, Zn
MTL#2 Cd, Cr, Cu, Pb, Ni, Zn
Explosives
Org Hg / Org Pb
Cr VI / Nitrates / Nitrites
602 / 8020
608 / 8080
610 / 8100
625 / 8270
~~TPH/G (Lucft) & BTEX (Lucft)~~
Sieve / TOC
Moisture / Density
Chloride / pH
Selected Metals Based on TTLC
Selected Metals Based on pH and Sul
TDS 160.1 / Hardness 242.1
Ammonia-330 / Sulfate-376
Title 22 / Metals
Alkalinity 310.1 / Formaldehyde

a) Identify specific metals requested under Special Instructions

Sample ID Number	Sample Description: Date	Time	Description	TAT	Container(s): #	Type	FOR LABORATORY USE ONLY: Lab ID
1 212657 ~~MW-1~~	6/23/92	1510	MW-3 (SPARE)	4	1	V (Hcl)	6132-003
2 212658							-004
3 212659		1630	MW-5				
4 212660			(SPARE)				-005
5 212661							
6 212662							
7 212663		1750	MW-2				
8 212664			(SPARE)				
9 212665							
10 212666							

TAT (Analytical Turn-Around Times) 1 = 24 hours 2 = 48 hours 3 = 1 week 4 = 2 weeks
Container Types. B=Brass Tube, V=VOA Vial, A=1-Liter Amber, G=Glass Jar, C=Cassette, O = Other

Special Instructions/Comments:
TPH/G (Lucft) & BTEX (Lucft) ON ALL SAMPLES

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Samples intact, temp ok (K.T) Sample 212661 Contains Air bubbles. 6/26/92 (K.T)

SEND DOCUMENTATION AND RESULTS TO (Check one).
☒ Project Manager/Office: C. McLEOD / ALAMEDA
☐ Client Name:
Company:
Address:
Phone: ( ) Fax:

McLaren Hart

CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY
Laboratory Project No.: 6132
Storage Refrigerator ID:
Storage Freezer ID:
Secured: Yes ✓ No

Project Name: TARGET Dublin Project #: 04.0122606.000 Sampler: D. WATTS (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) D. WATTS		Received by: (Signature and Printed Name) FED-X	Date: 6/24/92 Time: PM
Relinquished by: (Signature and Printed Name) Fed Ex		Received by: (Signature and Printed Name) Kathleen Fontenilla	Date: 6-25-92 Time: 09:00
Relinquished by: (Signature and Printed Name)		~~Received by: (Signature and Printed Name)~~ Logged By Kathleen Fontenilla	Date: 6-26-92 Time: 08:00
Relinquished by: (Signature and Printed Name)		Received by: (Signature and Printed Name)	Date: Time:

SHIP TO:
McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670
(916) 638-3696
FAX (916) 638-2842

Method of Shipment: FED-X
Shipment ID:

Circle or Add Analysis(es) Requested

a) Identify specific metals requested under Special Instructions

Sample ID Number	Sample Description: Date	Time	Description	TAT	Container(s): #	Type	FOR LABORATORY USE ONLY: Lab ID
1	212667	6/24/92	1045 MW-4	4	1	V (HCl)	6132-006
2	212668		(SPARE)				
3	212669						
4	212670						
5	212671		1225 MW-6				-007
6	212672		(SPARE)				-007
7	212673						
8	212674						
9							
10							

Special Instructions/Comments:
TPH/G (LUFT) + BTEX (LUFT) ON ALL SAMPLES

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other

TAT (Analytical Turn-Around Times) 1 = 24 hours 2 = 48 hours 3 = 1 week 4 = 2 weeks
Container Types: B=Brass Tube, V=VOA Vial, A=1-Liter Amber, G=Glass Jar, C=Cassette, O = Other

FOR LABORATORY USE ONLY. Sample Condition Upon Receipt: Samples intact, temp OK (KF) Sample 212674 contains Air bubbles 6-26-92 (KF)

SEND DOCUMENTATION AND RESULTS TO (Check one).
☒ Project Manager/Office: C. McLEOD/ALAMEDA
☐ Client Name:
Company:
Address:
Phone: ___(____)_____ Fax: