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RO206

May 4, 2005

Mr. Robert Schultz
Alameda County Health Care Services Agency (ACHCSA)
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Site Summary, Monitoring Well Destruction Request And Workplan**
Chevron Service Station 9-5542
7007 San Ramon Road
Dublin, California
RO#206

Dear Mr. Schultz:

On behalf of Chevron Environmental Management Company (ChevronTexaco), Cambria Environmental Technology (Cambria) presents this site summary and requests approval for the destruction of off-site monitoring wells at the above site (Figure 1). The destruction of three wells is necessary to accommodate construction of a new See's Candies Store located adjacent to the site to the east; additional destructions will eliminate wells no longer needed for this investigation as discussed in a phone conversation and subsequent email on April 19, 2005. Presented below are site conditions, conclusions and recommendations, and our proposed scope of work.

Site Conditions

The site is an active Chevron service station located on the northeast corner of the intersection of San Ramon Road and Dublin Boulevard in Dublin, California. The surrounding land use is primarily commercial with residential to the northwest. In February 1990, the existing service station was remodeled and the underground storage tanks (USTs) and product lines were removed and replaced. Chevron records indicate the property was leased by Chevron in 1965 at which time a station was constructed and operations began. Chevron purchased the property in 1990, coincidental with the station remodel referenced above.

Site Description: On-site facilities consist of a station building with three dispenser islands beneath a common canopy (Figure 2). Three gasoline USTs in a common pit are located directly east of the dispenser islands. Former gasoline and used-oil USTs were located northeast of the current dispenser islands (north of the current USTs). The site is located along the western edge of the Livermore Valley at the base of the eastern slope of the East Bay Hills.

The site resides at an elevation of approximately 360 feet above mean sea level with local topography gently sloping eastward toward San Ramon Creek, approximately 2,900 feet east, which appears to be the bottom of the valley. The nearest surface water is Dublin Creek located

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approximately 900 feet south of the site. California Department of Water Resources well search data shows no domestic or municipal supply wells exist within a 2,000 feet radius of the site.

Site Hydrogeology: Sediments beneath the site are characterized as alluvial fan deposits, consisting primarily of silt, silty clay, sandy clay, silty sand, clayey sand and occasional gravel lenses. Groundwater beneath the site has varied from 15.42 feet below grade (fbg) (MW-8, 3/96) to 28.12 fbg (MW-1, 12/91). Groundwater flow direction beneath the site has been calculated as flowing eastward, southeastward, and northeastward, though groundwater in the basin generally flows westward (DWR 118-2, 1996, 1974).

Hydrocarbon Distribution in Soil

Soil samples collected during UST and product line removal in February 1990 indicate the former UST pit area as the primary source of hydrocarbons at the site. Maximum TPHg and benzene concentrations reported in soil samples collected from the former tank pit were 3,100 mg/kg and 60 mg/kg, respectively (Tables 1). Subsequent soil sampling occurred when soil borings and monitoring wells were advanced on-site. The highest concentration of TPHg in soil was 1,600 mg/kg in soil boring B-1 at 20.5 fbg. The highest concentration of benzene in soil was 38 mg/kg in well MW-1 at 25 fbg. MW-1 and B-1 are within 40 feet of the former source area. Attachment A presents Delta's benzene soil concentration maps with depth. Delta's Site *Closure Request Using Risk-Based Corrective Action Analysis and Appendix B Guidelines*, dated December 6, 2000, and subsequent *Addendum to Risk-Based Corrective Action*, dated May 17, 2001, indicates the site does not pose a significant risk to human health or current use of groundwater in the area from residual hydrocarbon concentrations in soil and groundwater.

In Table 1, bold numbers present concentrations exceeding San Francisco Bay Regional Water Quality Board (RWQCB) Table B and Table D. residential environmental screening levels (ESLs) for shallow and deep soil ($\leq$3m bgs and $\geq$3m bgs) where water is a current or potential source of drinking water in Chapter 4 of *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* prepared by the California Regional Water Quality Control Board San Francisco Bay Region, interim final dated February 2005. All concentrations struck-through are concentrations from soil that has been excavated. Based on the resulting soil concentrations reported from 1990 through 1994, it appears soil in the vicinity of the former USTs exceeded the ESLs.

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Hydrocarbon Distribution in Groundwater

The highest concentrations of dissolved hydrocarbons in groundwater have historically been reported in wells MW-1, MW-4, and MW-9. These wells are located approximately 5, 64 and 145 feet down-gradient of the former USTs, respectively. These wells have consistently reported TPHg and benzene. Historically, the highest concentrations of TPHg in wells MW-1, MW-4 and MW-9 were 190,000 µg/L, 94,000 µg/L, and 18,000 µg/L, respectively. Current concentrations of TPHg in these wells are <50 µg/L, 8,900 µg/L, and 5,100 µg/L, respectively. Historically, the highest concentrations of benzene in wells MW-1, MW-4 and MW-9 were 29,000 µg/L, 18,000 µg/L, and 2,400 µg/L, respectively. Current concentrations of benzene in these wells are <0.5 µg/L, 550 µg/L, and 190 µg/L, respectively. MTBE was first reported in groundwater in March 1996. Historically, the highest concentrations of MTBE in wells MW-1, MW-4 and MW-9 were 380 µg/L, 250 µg/L, and 170 µg/L, respectively. Current concentrations of MTBE in these wells are <0.5 µg/L, 1 µg/L, and 1 µg/L, respectively. Degradation calculations (Attachment B) indicate concentrations are degrading in down-gradient well MW-9.

MTBE concentrations reported down-gradient of the site at the Dublin Retail Center, 7900-7916 Dublin Boulevard, Dublin, were highest down-gradient of that site, east on the property at boring B-2 (Attachment C). Between the Chevron site and the Dublin Retail Center boring B-2, were borings with grab-groundwater samples ranging from below the laboratory detection limit and 77 µg/L in GP-1 through GP-3. This suggests a source of MTBE located on the Dublin Retail Center property and not from MTBE associated with the Chevron site.

Hydrocarbons have been defined laterally in all directions by boring B-4, and wells MW-2, MW-3, MW-5 through MW8, and MW-10. The benzene plume in groundwater is currently limited to MW-4 and MW-9, approximately 220 feet in length down-gradient of the former USTs (Figure 3). Hydrocarbons in groundwater are decreasing indicating a naturally attenuating plume.

Conclusions and Recommendations

Based on the review of historical soil samples collected from the site, hydrocarbon-bearing soils are located primarily at depths greater than 15 fbg and appear to be concentrated within the former UST source area. Historical groundwater trends show concentrations of TPHg, benzene and MTBE at the site are low to non-detect for all wells outside of the source area. Concentrations of these chemical constituents in wells MW-1, MW-4 and MW-9 are generally decreasing because of prior source removal and continuing natural attenuation.

MTBE concentrations have not been defined vertically south of MW-9, and Cambria proposes advancing two deep borings, south and southwest of MW-9, and collecting grab-groundwater samples. Additionally, it appears enough groundwater data has been collected from all off-site

wells to indicate and validate a decreasing hydrocarbon plume; therefore, Cambria requests approval to properly destroy monitoring wells MW-6 through MW-10. The destruction of wells MW-6, MW-7 and MW-9 is necessary to facilitate construction activities for the See's Candies property east of the site. Subsequently, attempts will be made to find and recover MW-5 in order to collect an additional groundwater sample.

Proposed Scope of Work

Due to the location of the proposed See's Candies building, wells MW-6, MW-7 and MW-9 will be properly destroyed. Wells MW-8 and MW-10 are also proposed for destruction because sufficient data has been collected from these wells and further data collection appears unnecessary. Well construction details are presented in Table 2.

Two deep borings are proposed south and southwest of MW-9 to collect deeper groundwater samples in order to confirm MTBE vertically. The borings will be advanced to approximately 45 to 55 fbg, and a discrete grab-groundwater sample will be collected.

Cambria will additionally attempt to recover well MW-5 and collect a groundwater sample.

Cambria's standard procedure for monitoring well destruction and borings is included in Attachment D.

Upon approval of this workplan, well destruction and soil boring permits will be obtained from the Alameda County Public Works Agency.

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Closing

Please contact Sara Giorgi at (916) 630-1855 ext. 103 with any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Sara Giorgi
Senior Staff Geologist

David W. Herzog, PG #7211
Senior Project Geologist

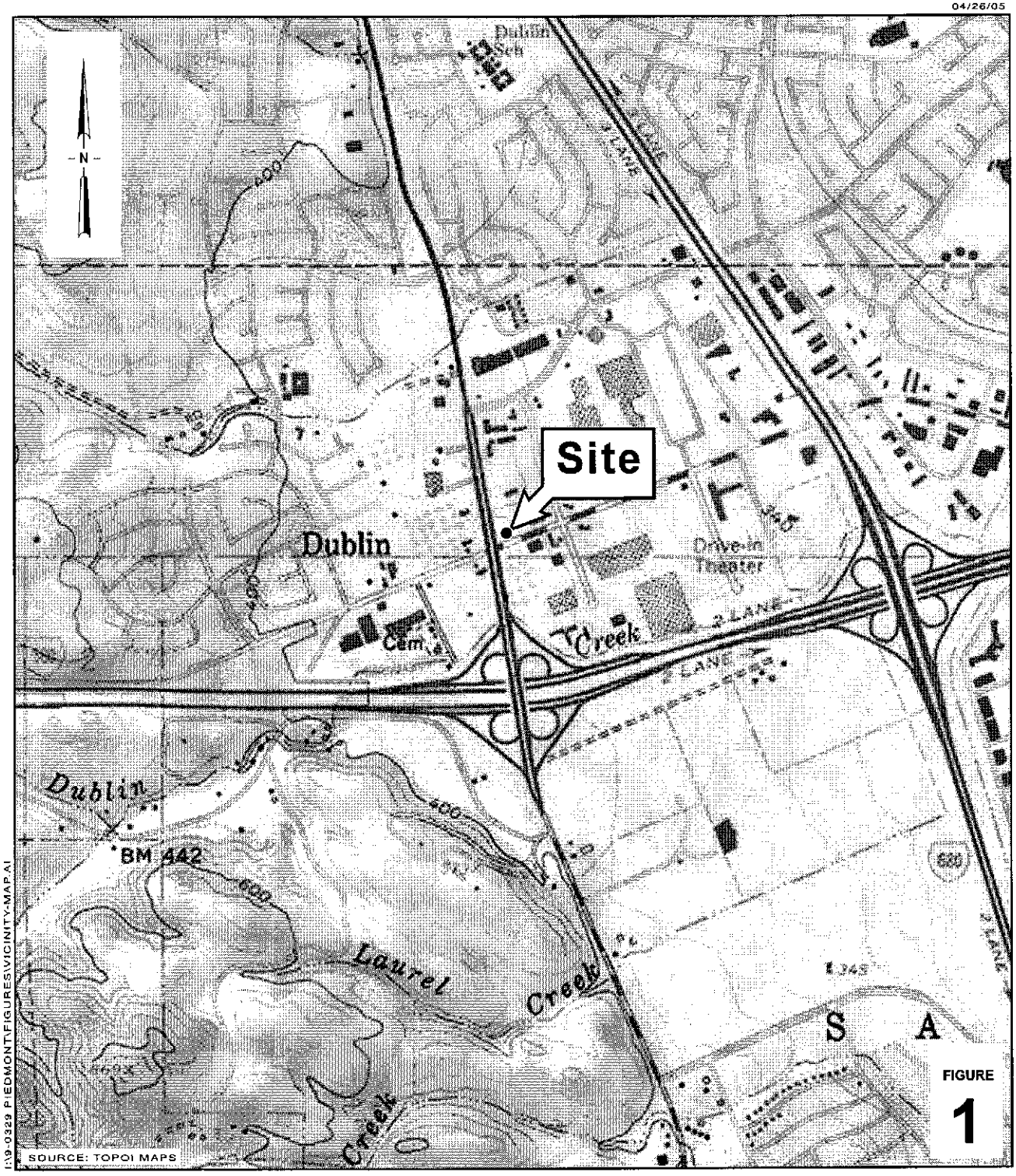
Figures:
1 – Vicinity Map
2 – Siteplan
3 – Benzene in Groundwater Map

Table:
1 – Historical Soil Results
2 – Well Construction Details

Attachment:
A – Delta's Benzene Remaining in Soil Maps and Mass Calculations
B – Degradation Calculations for MW-9
C – Dublin Retail Center Sitemap and Historic Groundwater Analytical Results Table
D – Standard Field Procedures for Well Destruction

cc: Mr. Dana Thurman, Chevron Environmental Management Company, PO Box 6012, San Ramon, CA 94583-2324
Mr. Tim Kircher, See's Candies, 400 Allan St, Daly City, CA 94014

04/26/05



I:\9-0329 PIEDMONT\FIGURES\VICINITY-MAP.AI

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Former Chevron Station 9-5542

7007 San Ramon Road

Dublin, California

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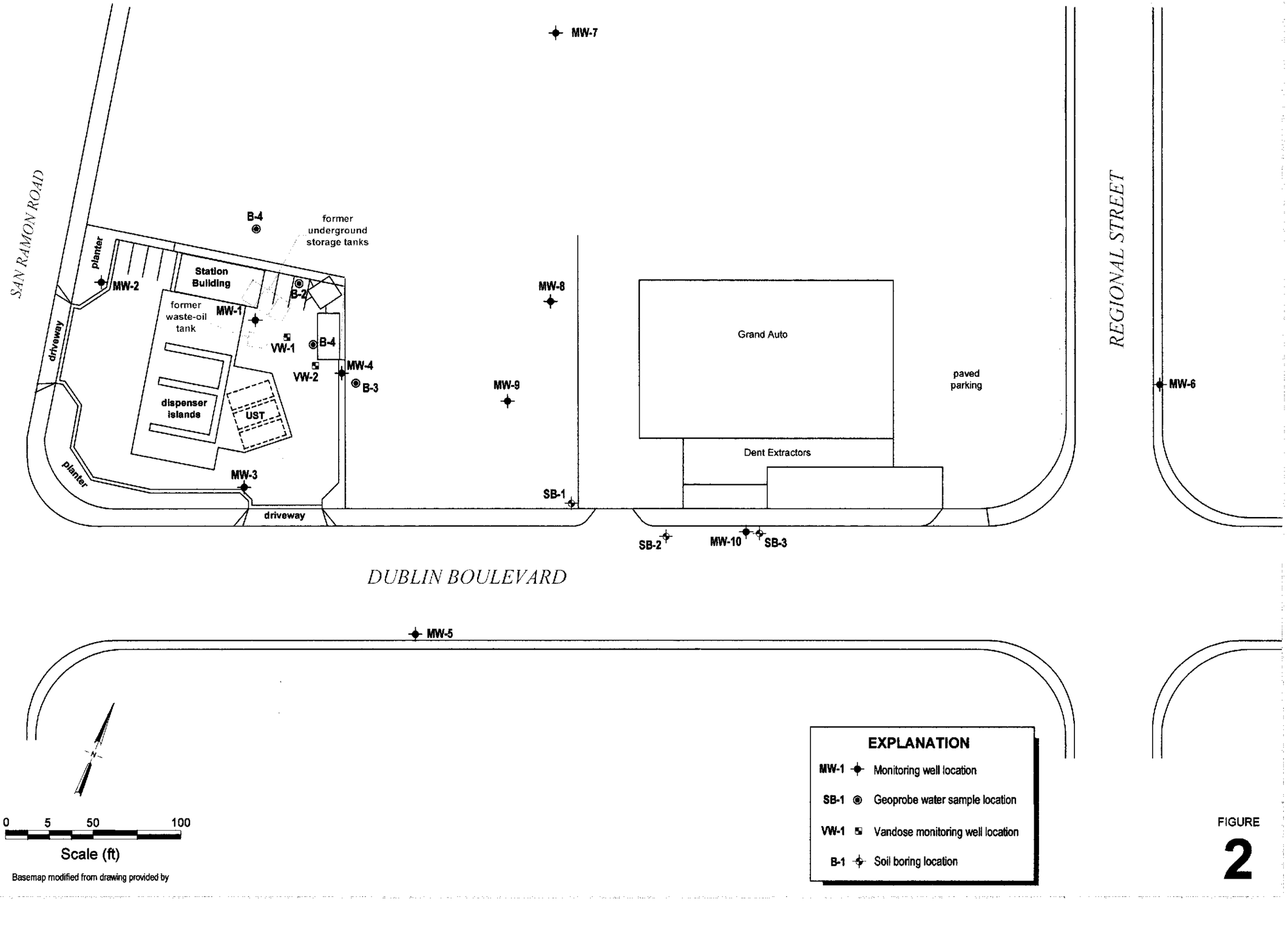
Vicinity Map

04/28/05

Site Plan



FIGURE

2

Cheveron Service Station 9-5542
7007 San Ramon Road
Dublin, California

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R:\9-5542 DUBLIN\FIGURES\9-5542_SITE_PLAN.DWG

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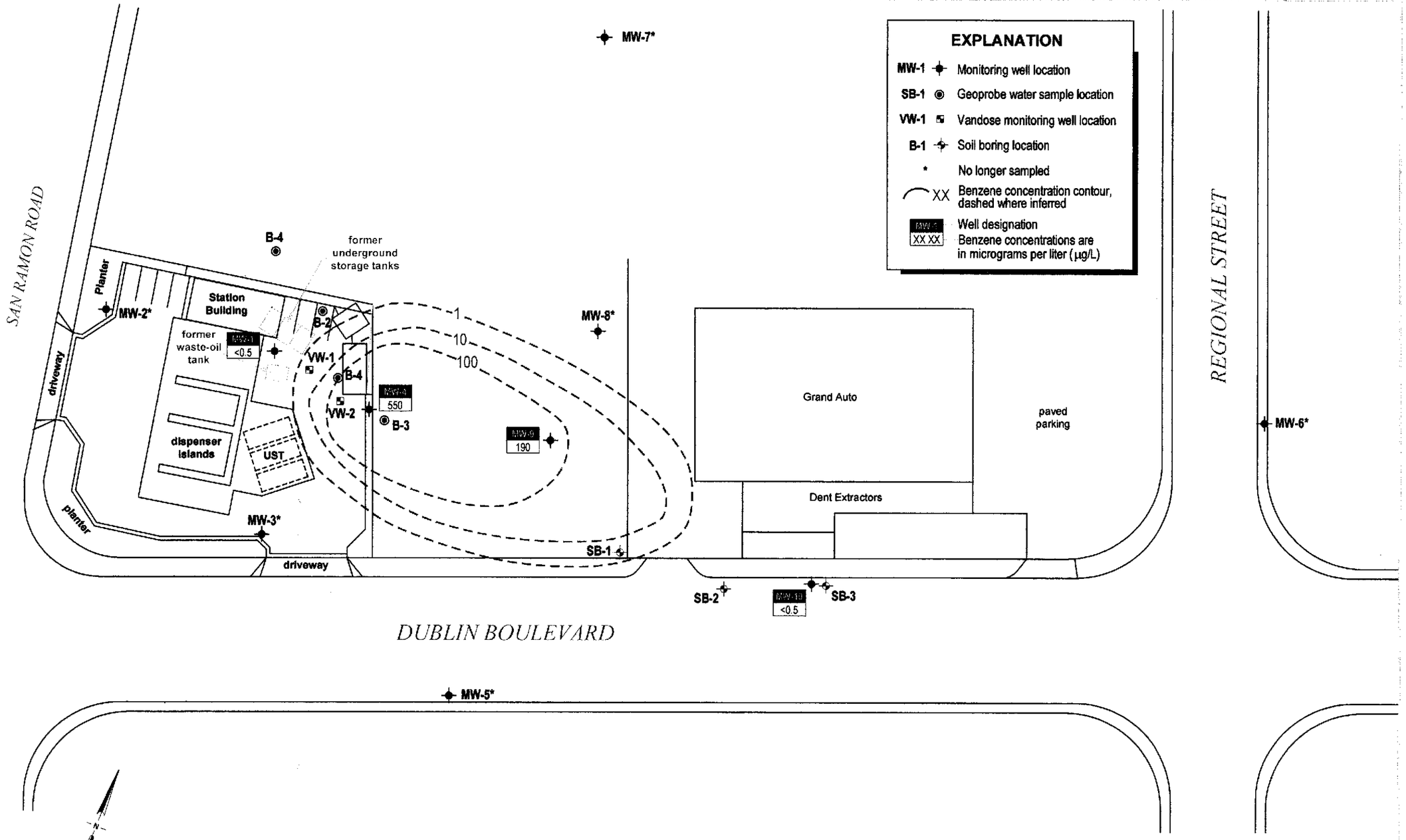

Basemap modified from drawing provided by

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Benzene Concentration in Groundwater

March 23, 2005

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Cheveron Service Station 9-5542
7007 San Ramon Road
Dublin, California

FIGURE
3

Table 1
Historical Soil Results
Chevron Station #9-5542, 7007 San Ramon Road, Dublin CA

Sample ID	Depth (feet below grade)	Date Sampled	TPHg	TPHd	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	VOC's	Semi-VOC's
			Concentration in milligrams per kilogram (mg/kg)									
Cumulative Soil Analytical Results From Drilling												
MW-1	25.0	3/27/1990	**1,300**	----	----	**38**	**150**	**34**	**180**	----	----	----
	30.0	3/27/1990	**270**	----	----	**1**	**4**	**4**	1	----	----	----
MW-2	15.0	3/26/1990	<10	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
MW-3	15.0	3/26/1990	<10	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	20.0	3/26/1990	<10	----	----	<0.005	0.01	0.01	0.12	----	----	----
	25.0	3/26/1990	51	----	----	<0.005	0.02	0.05	0.28	----	----	----
MW-4	15.0	3/28/1990	<10	<10	----	----	----	----	----	----	----	----
	20.0	3/28/1990	----	<10	----	----	----	----	----	----	----	----
	25.0	3/28/1990	<10	<10	39	**2.7**	**23**	**5.6**	**46**	----	----	----
MW-5	28.5	6/11/1991	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
MW-6	26.0	6/12/1991	<5.0	----	----	0.006	0.006	0.006	0.12	----	----	----
MW-7	26.0	6/11/1991	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
MW-8	20.0	12/6/1991	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
MW-9	24.5	6/8/1994	<1.0	----	----	**0.07**	0.11	0.58	**3.4**	----	----	----
	33.5	6/9/1994	<1.0	----	----	0.038	<0.005	<0.005	0.008	----	----	----
VW-1	5.0	11/24/1992	<1.0	----	----	<0.005	0.006	<0.005	<0.005	----	----	----
	14.0	11/24/1992	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	14.5	11/24/1992	2	----	----	<0.005	0.058	0.029	1.4	----	----	----
	19.5	11/24/1992	**250**	----	----	0.001	**5.6**	3.4	**20**	----	----	----
	24.0	11/24/1992	**990**	----	----	**2.4**	**60**	**15**	**99**	----	----	----
	27.0	11/24/1992	**230**	----	----	**2**	**15**	**5.4**	**27**	----	----	----
	31.0	11/24/1992	**130**	----	----	<0.005	0.73	1	**3.9**	----	----	----

Table 1
Historical Soil Results
Chevron Station #9-5542, 7007 San Ramon Road, Dublin CA

Sample ID	Depth (feet below grade)	Date Sampled	TPHg	TPHd	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	VOC's	Semi-VOC's
			Concentration in milligrams per kilogram (mg/kg)									
VW-2	5.0	11/25/1992	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	10.0	11/25/1992	<1.0	----	----	0.006	<0.005	<0.005	<0.005	----	----	----
	15.0	11/25/1992	<1.0	----	----	<0.005	<0.005	<0.005	0.009	----	----	----
	20.0	11/25/1992	**220**	----	----	**0.65**	**8.1**	**26**	**13**	----	----	----
	25.0	11/25/1992	**650**	----	----	**2.7**	**23**	**9**	**49**	----	----	----
	30.0	11/25/1992	1	----	----	**0.07**	0.001	0.012	0.025	----	----	----
B-1	5.5	6/8/1994	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	10.5	6/8/1994	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	15.5	6/8/1994	2	----	----	**0.081**	0.19	0.02	0.13	----	----	----
	20.5	6/8/1994	**1,600**	----	----	**5.3**	**72**	**23**	**120**	----	----	----
B-2	20.5	6/8/1994	2	----	----	0.06	0.026	0.031	0.19	----	----	----
	23.5	6/8/1994	8	----	----	**0.13**	0.037	0.12	0.83	----	----	----
B3	6.0	6/12/1996	----	----	----	----	----	----	----	----	----	----
	12.0	6/12/1996	----	----	----	----	----	----	----	----	----	----
	16.0	6/12/1996	----	----	----	----	----	----	----	----	----	----
	18.0	6/12/1996	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
B4	6.0	6/12/1996	----	----	----	----	----	----	----	----	----	----
	12.0	6/12/1996	<0.50	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
	18.0	6/12/1996	----	----	----	----	----	----	----	----	----	----
Soil Ananlytical Results from UST and Product Line Removal												
PL1	1.5	2/8/1990	9	----	----	**0.85**	0.017	0.2	1.2	----	----	----
PL2	3.0	2/8/1990	<0.5	----	----	<0.005	<0.005	<0.005	0.012	----	----	----
PL3	3.0	2/8/1990	3.9	----	----	0.0095	0.011	0.16	0.15	----	----	----
PL4	3.0	2/8/1990	2.8	----	----	<0.005	<0.005	0.16	0.072	----	----	----
P1	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
P2	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
P3	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
P4	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
P5	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----

Table 1
Historical Soil Results
Chevron Station #9-5542, 7007 San Ramon Road, Dublin CA

Sample ID	Depth (feet below grade)	Date Sampled	TPHg	TPHd	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	VOC's	Semi-VOC's
			Concentration in milligrams per kilogram (mg/kg)									
P6	3.0	9/16/1998	<1.0	----	----	<0.005	<0.005	<0.005	<0.005	----	----	----
AF	11.5	2/13/1990	~~3,100~~	—	—	~~1.80~~	~~50~~	~~51~~	~~360~~	----	----	----
	16.0	2/13/1990	**190**	----	----	**0.26**	2.5	2.5	**15**	----	----	----
Aop	11.0	2/13/1990	~~5,000~~	----	----	~~2~~	~~210~~	~~120~~	~~780~~	----	----	----
	15.5	2/13/1990	~~5,100~~	----	----	~~30~~	~~360~~	~~110~~	~~680~~	----	----	----
	22.0	2/13/1990	**3,100**	----	----	**60**	**219**	**69**	**355**	----	----	----
BF	11.0	2/13/1990	~~5.9~~	----	----	~~0.19~~	~~0.060~~	~~0.15~~	~~0.34~~	----	----	----
	16.0	2/13/1990	**86**	----	----	0.046	0.4	0.13	1.2	----	----	----
Bop	11.5	2/13/1990	~~4,800~~	----	----	~~8.8~~	~~430~~	~~130~~	~~690~~	----	----	----
	16.0	2/13/1990	~~2,900~~	----	----	~~23~~	~~150~~	~~45~~	~~240~~	----	----	----
	22.0	2/13/1990	**1,300**	----	----	**20**	**98**	**33**	**160**	----	----	----
CF	11.0	2/13/1990	~~2~~	----	----	~~0.017~~	~~0.068~~	~~0.045~~	~~0.12~~			
	15.0	2/13/1990	12	----	----	**0.12**	0.4	0.11	1.1	----	----	----
Cop	12.0	2/13/1990	~~2,900~~	----	----	~~2.2~~	~~120~~	~~51~~	~~300~~			
	22.0	2/13/1990	18	----	----	**3**	**5**	0.5	3	----	----	----
Sidewall-1	13.5	2/13/1990	1.1	----	----	0.022	0.013	0.023	0.07	----	----	----
Sidewall-2	8.3	2/13/1990	<0.05	----	----	<0.5	<0.005	<0.005	0.0068	----	----	----
Sidewall-3	7.5	2/13/1990	18	----	----	0.27	0.89	0.4	2.8	----	----	----
WoM	8.5	2/13/1990	0.55	----	12	0.0046	0.019	<0.005	0.49	----	ND	ND
	10.5	2/13/1990	<0.5	----	12	<0.5	<0.005	<0.005	0.02	----	ND	ND

Abbreviations and Methods:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015.

TOG = Toal oil and grease

Table 1
Historical Soil Results
Chevron Station #9-5542, 7007 San Ramon Road, Dublin CA

Sample ID	Depth (feet below grade)	Date Sampled	TPHg	TPHd	TOG	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	VOC's	Semi-VOC's
			Concentration in milligrams per kilogram (mg/kg)									

mg/kg = milligrams per kilogram.
NA = Not analyzed
VOC's = Volatile organic compounds
Semi-VOC's = Semi volatile organic compounds
MTBE = Methyl tertiary butyl ether.

Table 2
Well Construction Details
Chevron Station #9-5542, 7007 San Ramon Road, Dublin, CA

Well ID	Total Drilled Depth (fbg)	Date Installed	Well Diameter	Screen Type	Screen Interval (fbg)	Filter Pack Interval (fbg)	Bentonite Seal Interval (fbg)	Grout Interval (fbg)
MW-1*	51	11/25/1992	4-inch	0.010	30-50	32-51	31-32	1-31
MW-2	38.5	3/26/1990	2-inch	0.020	22-37	20-37	17-20	1-31
MW-3	36.5	3/26/1990	2-inch	0.020	20-35	19-35	16-19	1-31
MW-4	37	3/28/1990	2-inch	0.020	20-35	19-35	16-19	1-31
MW-5	37	6/11/1991	2-inch	0.020	21-36	19.5-36	17-19.5	1.5-17
MW-6	35	6/11/1991	2-inch	0.020	20-35	18.5-35	17-18.5	1.5-17
MW-7	35	6/12/1991	2-inch	0.020	20-35	18.5-35	17-18.5	1.5-17
MW-8	35.5	5/20/1992	2-inch	0.020	15-35	13-35	11-13	1.5-11
MW-9	34.5	6/8/1994	2-inch	0.020	19.5-34.5	18.5-34.5	17.5-18.5	1-17.5
MW-10	35	8/14/1992	2-inch	0.010	15-35	13-35	12-13	0.5-13
VW-1	31.5	11/24/1992	2-inch	0.010	25-30	23-31.5	20-23	1.5-23
VW-2	31.5	11/25/1992	2-inch	0.010	24-29	22-31.5	20-22	1.5-22

Abbreviations and Methods:

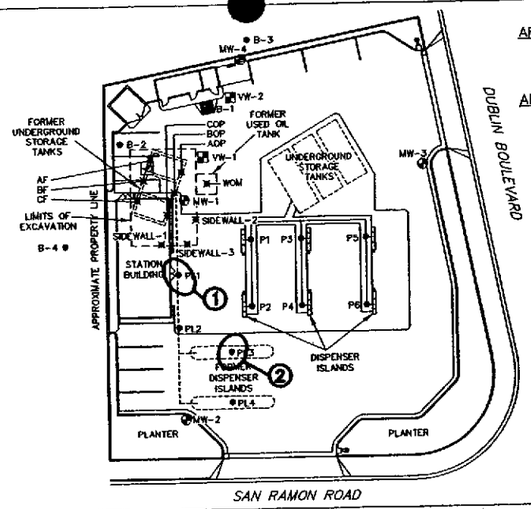
* = monitoring well originally installed on 3/27/90 to 35-feet

fbg = feet below grade

ATTACHMENT A

Delta's Benzene Remaining in Soil Maps

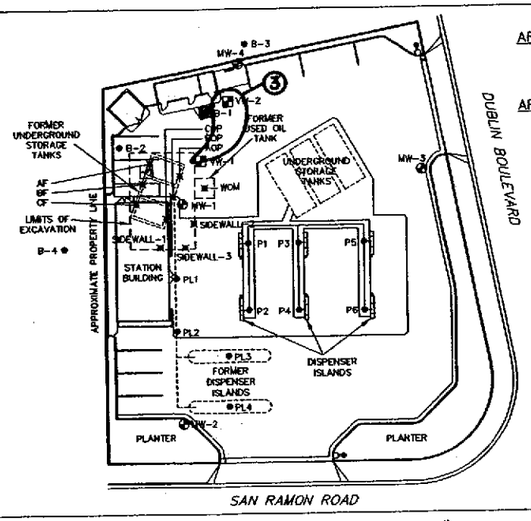
and Mass Calculations



AREA	TOTAL AREA IN SQUARE FEET
1	126.4 ft²
2	119.8 ft²

AREA	CONCENTRATION IN mg/Kg
1	0.85 mg/Kg
2	0.0095 mg/Kg

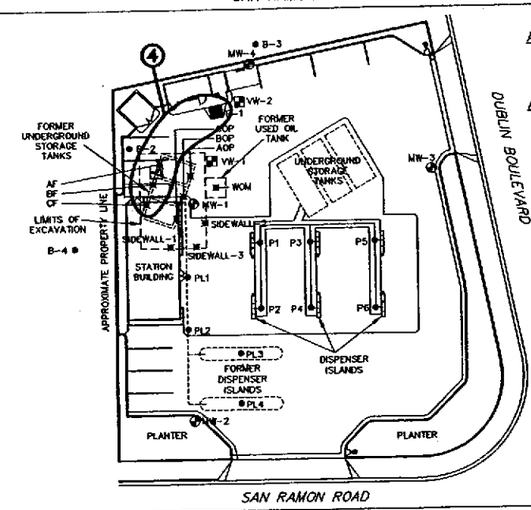
LAYER A: 0' to 5'



AREA	TOTAL AREA IN SQUARE FEET
3	335.4 ft²

AREA	CONCENTRATION IN mg/Kg
3	0.006 mg/Kg

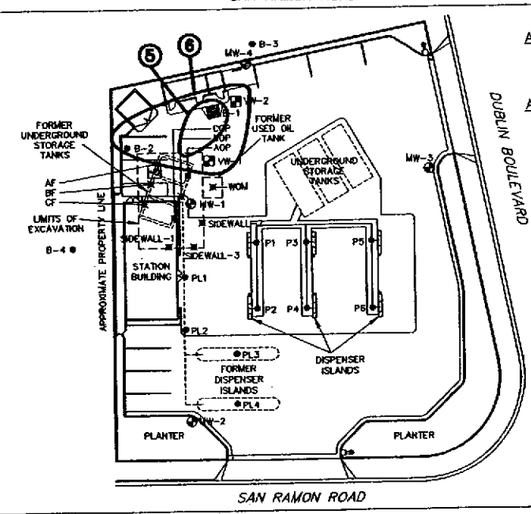
LAYER B: 5.5' to 10.5'



AREA	TOTAL AREA IN SQUARE FEET
4	873.4 ft²

AREA	CONCENTRATION IN mg/Kg
4	0.127 mg/Kg

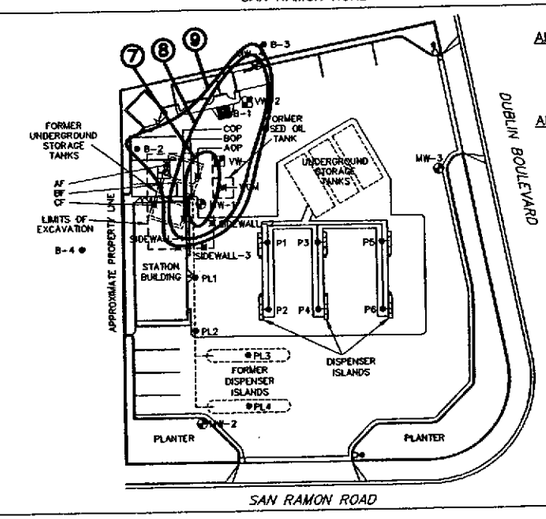
LAYER C: 11' to 16'



AREA	TOTAL AREA IN SQUARE FEET
5	285.5 ft²
6	1367.9 ft² – (285.5 ft²) = 1082.4 ft²

AREA	CONCENTRATION IN mg/Kg
5	5.3 mg/Kg
6	0.35 mg/Kg

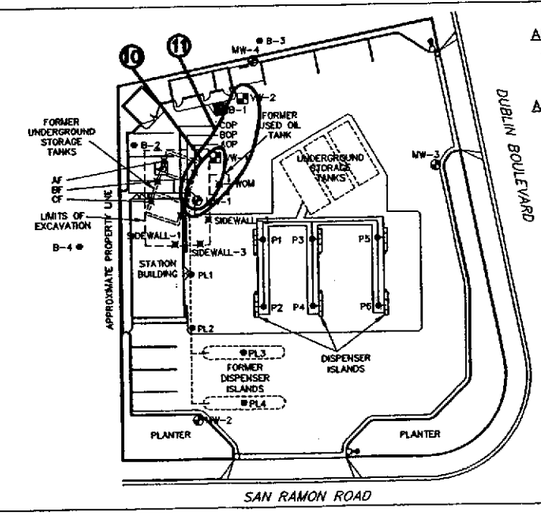
LAYER D: 16.5' to 20.5'



AREA	TOTAL AREA IN SQUARE FEET
7	304.5 ft²
8	1686.4 ft² – (304.5 ft²) = 1381.9 ft²
9	2543.2 ft² – (1686.4 ft²) = 856.8 ft²

AREA	CONCENTRATION IN mg/Kg
7	39.3 mg/Kg
8	2.8 mg/Kg
9	0.13 mg/Kg

LAYER E: 21' to 25'



AREA	TOTAL AREA IN SQUARE FEET
10	243.0 ft²
11	852.5 ft² – (243 ft²) = 609.5 ft²

AREA	CONCENTRATION IN mg/Kg
10	1.5 mg/Kg
11	0.07 mg/Kg

LAYER F: 25.5' to 31'

LEGEND:

- MW-1 MONITORING WELL LOCATION
- VW-2 VADOSE MONITORING WELL LOCATION
- B-1 SOIL BORING LOCATION
- P1 SOIL SAMPLE LOCATION
- CF EXCAVATION SOIL SAMPLE LOCATION
- INFERRED EXTENT OF BENZENE REMAINING IN SOIL

NOTE: FORMER PUMP ISLANDS LOCATED FROM A BLAINE TECH SERVICES HAND SKETCH DRAWING.

North

0 60 FT

SCALE

FIGURE 12

BENZENE REMAINING IN SOIL

CHEVRON SERVICE STATION NO. 9-5542

7007 SAN RAMON ROAD

DUBLIN, CA.

PROJECT NO. DG95-542	DRAWN BY M.L. 9/13/00
FILE NO. DG95542E	PREPARED BY JWS
REVISION NO. 2	REVIEWED BY

Delta Environmental Consultants, Inc.

\\Sacramento\CAD Files\Sacramento\Chevron\DG95542E.dwg

TABLE 6

TPHg and BENZENE MASS CALCULATIONS
SITE CLOSURE REQUEST

Chevron Station No. 9-5542
7007 San Ramon Road
Dublin, California

SOIL MASS CALCS

TPHg

TPHg (lb) = (Volume (ft3) x Soil Density (lb/ft3) x Concentration (mg/Kg)) / (1,000,000 (mg/Kg))

Sample Area	Concentration (mg/Kg)	Area (ft^2)	Depth 1 (ft)	Depth 2 (ft)	Volume (ft^3)	Soil Density (lb/ft^3)	TPHg (lb)
1	3.35	257.9	0	5	1,289.5	110.0	**0.48**
2	9	103	0	5	515.0	110.0	**0.51**
3	138	215.6	11	16	1,078.0	110.0	**16.36**
4	86	251.3	11	16	1,256.5	110.0	**11.89**
5	2	940.7	11	16	4,703.5	110.0	**1.03**
6	1600	363.7	16.5	20.5	1,454.8	110.0	**256.04**
7	235	635.4	16.5	20.5	2,541.6	110.0	**65.70**
8	2	693.4	16.5	20.5	2,773.6	110.0	**0.61**
9	3100	81	21	25	324.0	110.0	**110.48**
10	1300	283.8	21	25	1,135.2	110.0	**162.33**
11	820	540.4	21	25	2,161.6	110.0	**194.98**
12	51	2061.1	21	25	8,244.4	110.0	**46.25**
13	8	2633.5	21	25	10,534.0	110.0	**9.27**
14	210	257.1	25.5	31	1,414.1	110.0	**32.66**
15	1	640.3	25.5	31	3,521.7	110.0	**0.39**
						TOTAL POUNDS TPHg:	**908.99**

BENZENE

Benzene (lb) = (Volume (ft3) x Soil Density (lb/ft3) x Concentration (mg/Kg)) / (1,000,000 (mg/Kg))

Sample Area	Concentration (mg/Kg)	Area (ft^2)	Depth 1 (ft)	Depth 2 (ft)	Volume (ft^3)	Soil Density (lb/ft^3)	BENZENE (lb)
1	0.85	126.4	0	5	632	110	**0.0591**
2	0.0095	119.8	0	5	599	110	**0.0006**
3	0.006	335.4	5.5	10.5	1677	110	**0.0011**
4	0.127	873.4	11	16	4367	110	**0.0610**
5	5.3	285.5	16.5	20.5	1142	110	**0.6658**
6	0.35	1082.4	16.5	20.5	4329.6	110	**0.1667**
7	39.3	304.5	21	25	1218	110	**5.2654**
8	2.8	1381.9	21	25	5527.6	110	**1.7025**
9	0.13	856.8	21	25	3427.2	110	**0.0490**
10	1.5	243	25.5	31	1336.5	110	**0.2205**
11	0.07	609.5	25.5	31	3352.25	110	**0.0258**
						TOTAL POUNDS BENZENE:	**8.2176**

ATTACHMENT B

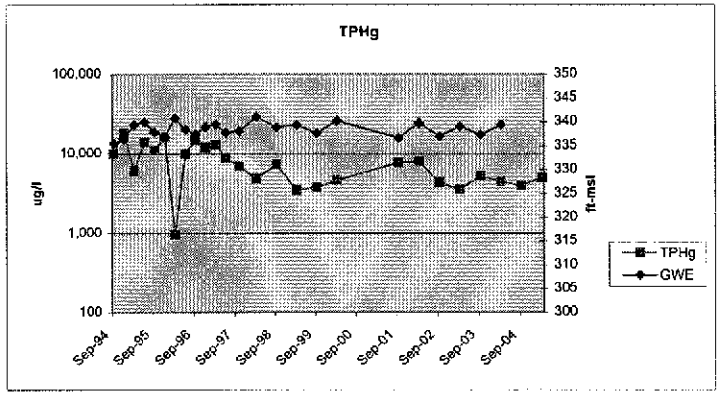
Degradation Calculations

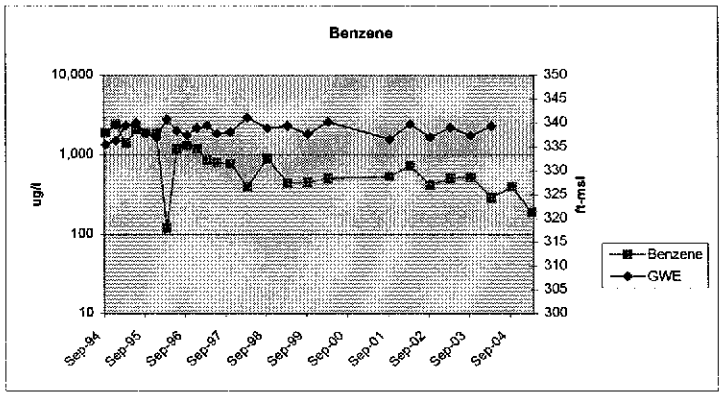
Concentration Data for Well MW-9 - Chevron Facility 9-5542, 7007 San Ramon Valley Boulevard, Dublin, California

Date	GWE	TPHg (ug/l)	Benzene (ug/L)
09/22/94	335.49	10,000	1,900
12/08/94	336.39	18,000	2,400
03/06/95	339.40	6,100	1,400
06/08/95	339.94	14,000	2,100
09/13/95	337.85	11,000	1,900
12/16/95	336.91	16,000	1,900
03/28/96	340.78	960	120
06/27/96	338.39	10,000	1,200
09/30/96	337.47	15,000	1,300
12/30/96	338.95	12,000	1,200
03/11/97	339.50	13,000	850
06/10/97	337.81	9,000	800
10/01/97	338.06	7,000	770
03/29/98	341.11	4,900	400
09/12/98	338.86	7,400	900
03/26/99	339.34	3,490	441
09/29/99	337.67	3,820	455
03/17/00	340.20	4,680	510
09/17/01	336.69	7,700	540
03/25/02	339.78	8,000	730
09/16/02	336.97	4,400	420
03/18/03	339.08	3,600	510
09/18/03	337.34	5,300	530
03/24/04	339.35	4,500	290
09/01/04		4,000	400
03/23/05		5,100	190

Days Since Peak Concentration 9/22/1994	TPHg (ug/l)
0	10,000
77	18,000
165	6,100
259	14,000
356	11,000
450	16,000
553	960
644	10,000
739	15,000
830	12,000
901	13,000
992	9,000
1,105	7,000
1,284	4,900
1,451	7,400
1,646	3,490
1,833	3,820
2,003	4,680
2,552	7,700
2,741	8,000
2,916	4,400
3,099	3,600
3,283	5,300
3,471	4,500
3,632	4,000
3,835	5,100

Days Since Peak Concentration 9/22/1994	Benzene (ug/l)
0	1,900
77	2,400
165	1,400
259	2,100
356	1,900
450	1,900
553	120
644	1,200
739	1,300
830	1,200
901	850
992	800
1,105	770
1,284	400
1,451	900
1,646	441
1,833	455
2,003	510
2,552	540
2,741	730
2,916	420
3,099	510
3,283	530
3,471	290
3,632	400
3,835	190





Predicted Time to Cleanup of Benzene in Well MW-9, Chevron Facility 9-5542

Calculate "time to cleanup" given the first-order decay equation:

$y = b e^{ax}$ $\Longrightarrow$ $x = \ln(y/b) / a$

Given

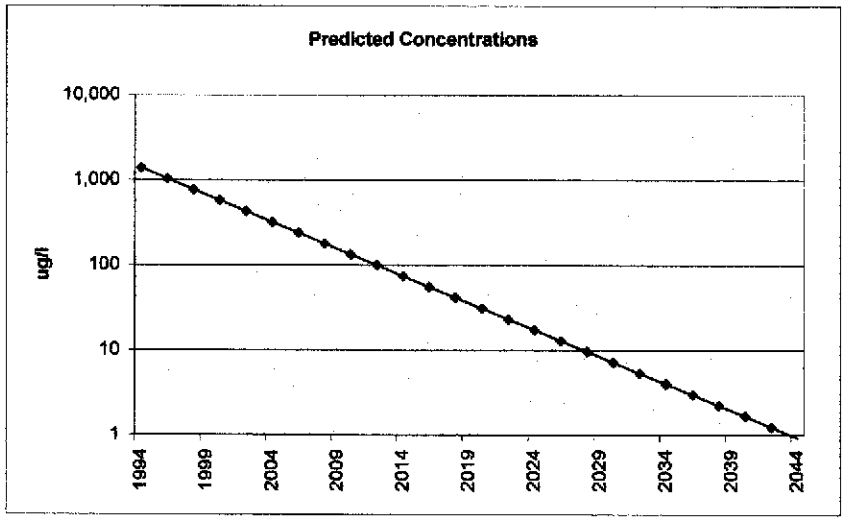
Water Quality Objective:	y	1	ug/L
Constant:	b	1386.5	
Constant:	a	-0.0004	
Date of first sample:		9/22/1994	

Calculate

Days from first sample:	x	18,086	Days
Years from first sample:		49.6	Years
Estimated date of cleanup:		Mar-2044	

Calculated Half Life = -ln(2)/a

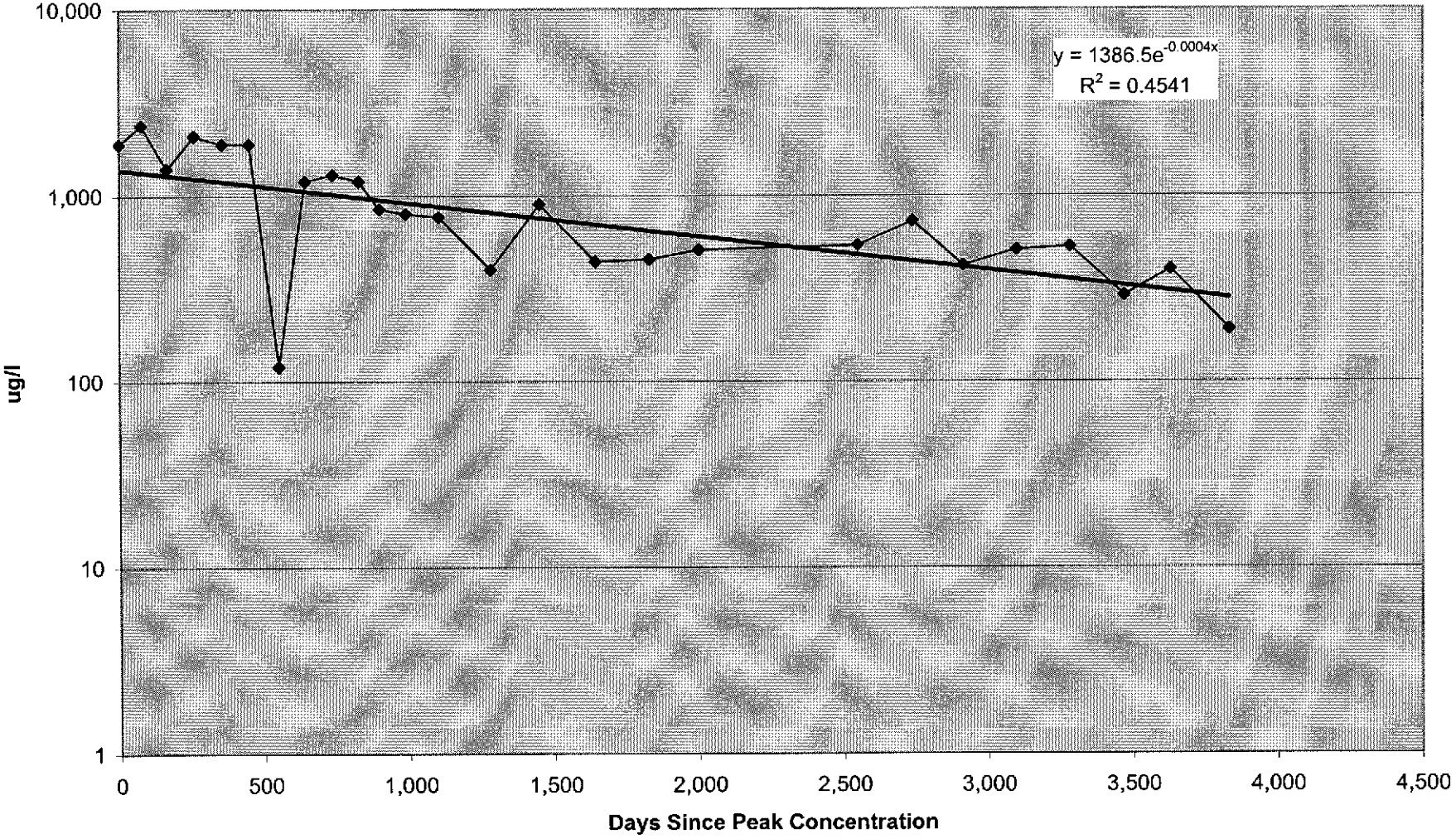
1,733	Days
4.75	years



Concentration Trend Prediction

Date	Days from First Sample	Predicted Concentration (ug/l)
9/22/1994	0	1,387
9/22/1996	731	1,035
9/23/1998	1,462	773
9/23/2000	2,193	577
9/24/2002	2,924	430
9/24/2004	3,655	321
9/25/2006	4,386	240
9/25/2008	5,117	179
9/26/2010	5,848	134
9/26/2012	6,579	100
9/27/2014	7,310	74
9/27/2016	8,041	56
9/28/2018	8,772	42
9/28/2020	9,503	31
9/29/2022	10,234	23
9/29/2024	10,965	17
9/30/2026	11,696	13
9/30/2028	12,427	10
10/1/2030	13,158	7.2
10/1/2032	13,889	5.4
10/2/2034	14,620	4.0
10/2/2036	15,351	3.0
10/3/2038	16,082	2.2
10/3/2040	16,813	1.7
10/4/2042	17,544	1.2
10/4/2044	18,275	0.9

Benzene Concentrations in Groundwater (MW-9)
Chevron Facility 9-5542



R:\9-5542 Dublin\9-5542 Trend Graphs Corrected MW-9 Benz Trend

Predicted Time to Cleanup of TPHg in Well MW-9, Chevron Facility 9-5542

Calculate "time to cleanup" given the first-order decay equation:

$y = b\,e^{ax}$ $\Longrightarrow$ $x = \ln(y/b) / a$

Given

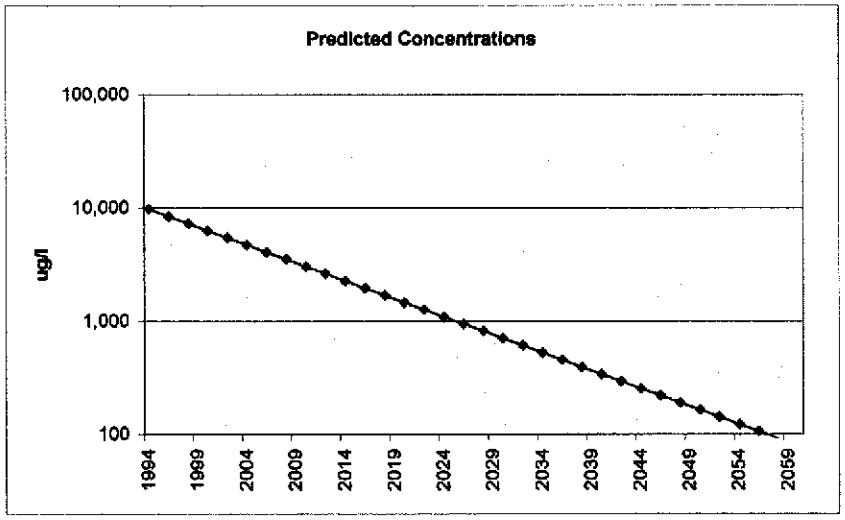
Water Quality Objective:	y	100	ug/L
Constant:	b	9806.2	
Constant:	a	-0.0002	
Date of first sample:		9/22/1994	

Calculate

Days from first sample:	x	22,928	Days
Years from first sample:		62.8	Years
Estimated date of cleanup:		Jun-2057	

Calculated Half Life = -ln(2)/a

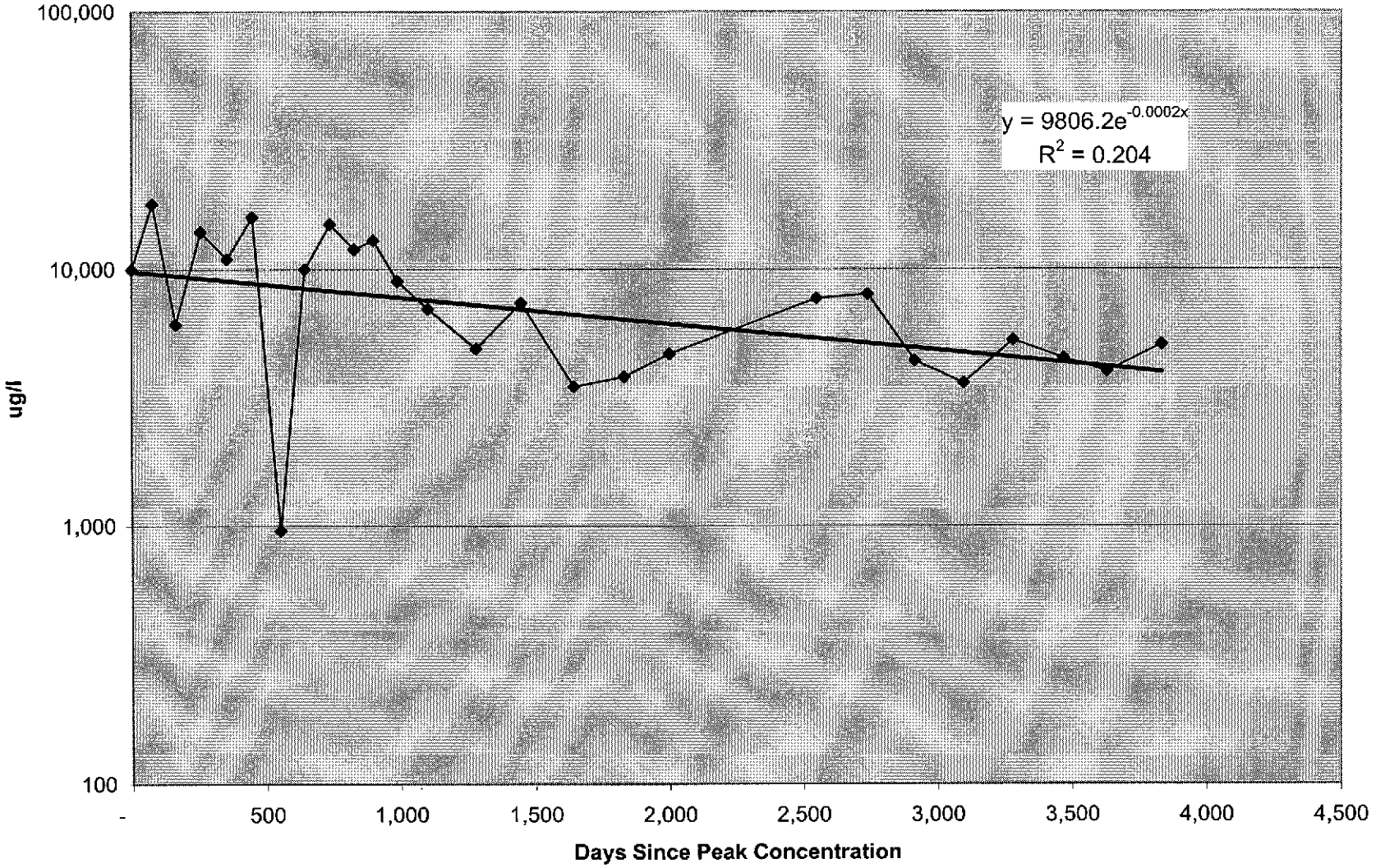
3,466	Days
9.50	years



Concentration Trend Prediction

Date	Days from First Sample	Predicted Concentration (ug/l)
9/22/1994	0	9,806
9/21/1996	731	8,473
9/22/1998	1,461	7,321
9/21/2000	2,192	6,326
9/22/2002	2,922	5,466
9/21/2004	3,653	4,723
9/22/2006	4,383	4,081
9/21/2008	5,114	3,527
9/22/2010	5,844	3,047
9/21/2012	6,575	2,633
9/22/2014	7,305	2,275
9/21/2016	8,036	1,966
9/22/2018	8,766	1,699
9/21/2020	9,497	1,468
9/22/2022	10,227	1,268
9/21/2024	10,958	1,096
9/22/2026	11,688	947
9/21/2028	12,419	818
9/22/2030	13,149	707
9/21/2032	13,880	611
9/22/2034	14,610	528
9/21/2036	15,341	456
9/22/2038	16,071	394
9/21/2040	16,802	341
9/22/2042	17,532	294
9/21/2044	18,263	254
9/22/2046	18,993	220
9/21/2048	19,724	190
9/22/2050	20,454	164
9/21/2052	21,185	142
9/22/2054	21,915	122
9/21/2056	22,646	106
9/22/2058	23,376	91
9/21/2060	24,107	79

TPHg Concentrations in Groundwater (MW-9)
Chevron Facility 9-5542



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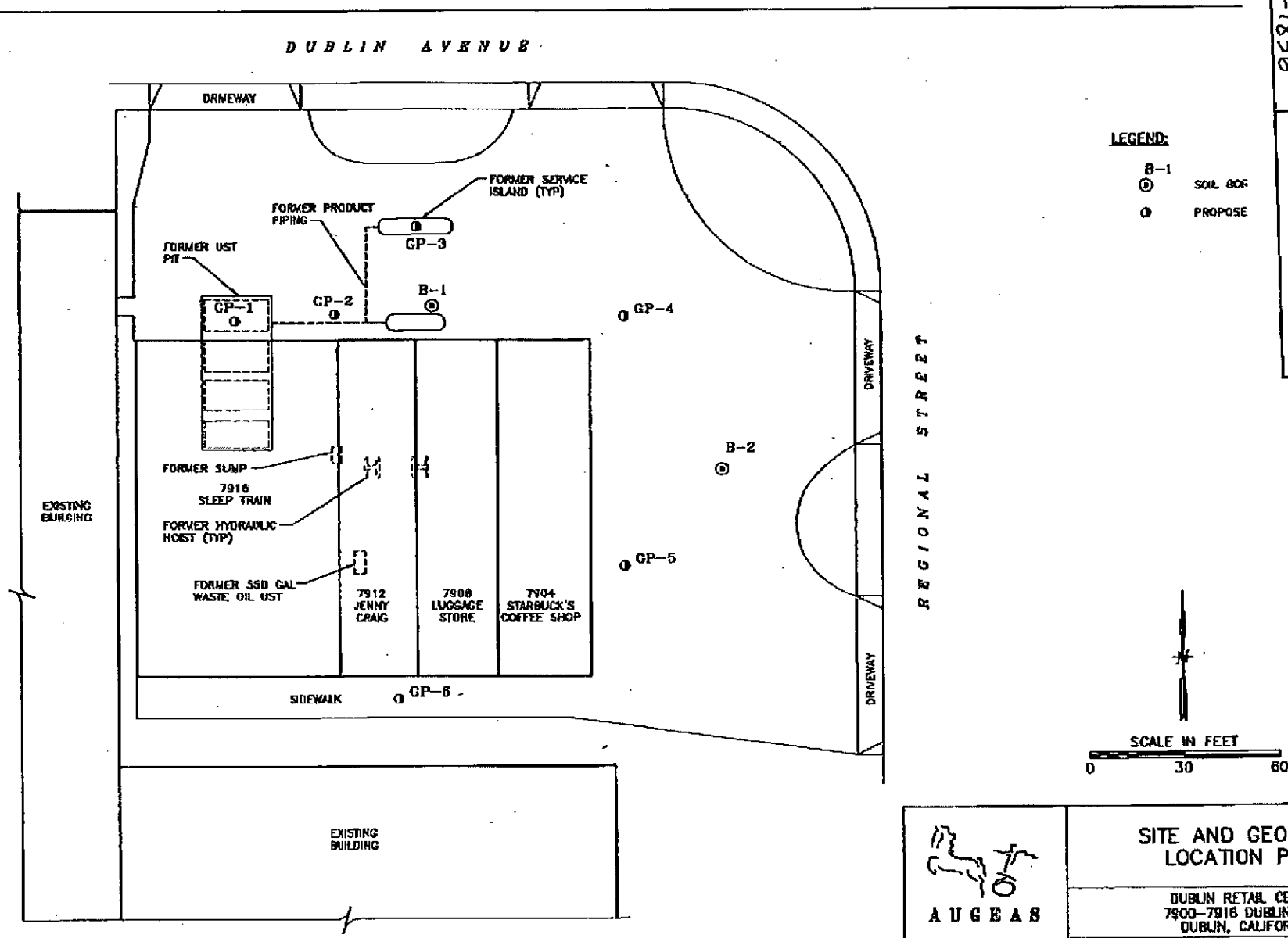
ATTACHMENT C

Dublin Retail Center Sitemap and

Historic Soil Analytical Results Table

Post-it® Fax Note 7671 | Date 4/19 | # of pages ▶ 3
To Sara Giorgi | From Schultz
Co./Dept. Cambria | Co. ACDEH
Phone # | Phone #
Fax # 916-630-1856 | Fax #



REFERENCE:
REPRODUCED FROM ARDO SERVICE STATION BLUEPRINT DATED: 3-6-88

AUGEAS
CORPORATION
HALF MOON BAY

SITE AND GEOPROBE LOCATION PLAN

DUBLIN RETAIL CENTER
7900-7916 DUBLIN BLVD
DUBLIN, CALIFORNIA

3-17-03

FIGURE 2

Table 2
Historical Groundwater Analytical Results
Dublin Retail Center
7900-7916 Dublin Boulevard, Dublin, California

Sample ID	Date Collected	Total Petroleum Hydrocarbons as (µg/L)		Aromatic Volatile Organic Compounds (µg/L)				Oxygenated Compounds (µg/L)								
		Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA	eth-anol	meth-anol	1,2-DCA	EDB
GW-1*	9/2/98	440 b,f	1,000 g,b	<0.5	21	<0.5	0.69	160*	--	--	--	--	--	--	--	--
GP-1-W	2/21/03	<50 i	76 i,g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<50	<500	<0.5	<0.5
GP-2-W	2/21/03	<50 i	190 i,b,g	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<5.0	<50	<500	<0.5	<0.5
GP-3-W	2/21/03	<50	62 b	<0.5	<0.5	<0.5	<0.5	77	<1.0	<1.0	<1.0	<10	<100	<1000	<1.0	<1.0
GP-4-W	2/21/03	<50 i	1,200 c/m,i	<0.5	<0.5	<0.5	<0.5	74	<1.0	<1.0	<1.0	13	<100	<1000	<1.0	<1.0
GP-5-W	2/21/03	120 a,I	450 g	<0.5	<0.5	6.9	48	<0.5	<0.5	<0.5	<0.5	<5.0	<50	<500	<0.5	<0.5
GP-6-W	2/21/03	<50 i	70 i,g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<50	<500	<0.5	<0.5
Analytical Method		8015M		8020				8260M								

Notes:

-- = not applicable
NS = Not Sampled
FPP = Free Phase Product
(µg/L) =micrograms per liter
MTBE = methyl tertiary butyl ether
DIPE = Di-isopropyl Ether
ETBE = Ethyl tert-Butyl Ether
TAMB - tert-Amyl Methyl Ether
1,2-DCA = 1, 2-Dichloroethane
EDB = Ethylene dibromide
TBA = tert-butyl alcohol
f = one to a few isolated peaks present
g = oil range compounds are significant
c = aged diesel? Is significant
b = diesel range compounds are significant; no recognizible pattern
m = fuel oil
GW-1* = "grab" groundwater sample collected from boring B-2

Table 1
Historical Soil Analytical Results
Dublin Retail Center
7900-7916 Dublin Boulevard, Dublin, California

Sample ID	Sample depth (ft)	Date Collected	Total Petroleum Hydrocarbons as (mg/kg)		Aromatic Volatile Organic Compounds (mg/kg)				Oxygenated Compounds (mg/kg)								
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	tert-Butanol	eth-anol	meth-anol	1,2-DCA	EDB
AB-1A**	5	8/31/98	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005*	--	--	--	--	--	--	--	--
AB-1B**	10	8/31/98	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005*	--	--	--	--	--	--	--	--
AB-1C**	15	8/31/98	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005*	--	--	--	--	--	--	--	--
GP-1@4'	4	2/21/03	<1.0	1.6 g	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-1@16'	16	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-2@8'	8	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-2@20'	20	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-3@12'	12	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-3@20'	20	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-4@4'	4	2/21/03	<1.0	1.2 g	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-4@16'	16	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-5@8'	8	2/21/03	<1.0	1.9 g	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-5@20'	20	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-6@10'	10	2/21/03	<1.0	1.0 g	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
GP-6@20'	20	2/21/03	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0	<25	<2500	<250	<5.0	<5.0
Analytical Method			8015M		8020				8260M								

Notes:

-- = not applicable
(mg/kg) = milligrams per kilograms
MTBE = methyl tertiary butyl ether
DIPE = Di-isoprpopyl Ether
ETBE = Ethyl tert-Butyl Ether
TAME - tert-Amyl Methyl Ether
1,2-DCA = 1, 2-Dichloroethane
EDB = Ethylene dibromide
g = oil range compounds are significant
* = analyzed with EPA 8020
** = soil samples collected from boring B-1

ATTACHMENT D

Standard Field Procedures for

Well Destruction

CAMBRIA

STANDARD WELL DESTRUCTION FIELD PROCEDURES

This document presents standard field methods for destroying groundwater monitoring wells. The objective of well destruction is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 lb. sack of Portland I/II Cement. Once the well casing is full of grout, it remains pressurized by applying pressure with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

When well drill out is required, the well location is cleared for subsurface utilities and a hollow-stem auger drilling rig is used to drill out the well casing and filter pack materials. First, drill rods are dropped down the well and used to guide the augers as they drill out the well. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

CHEVRON U.S.A. MARKETING FACILITIES DATE: 10/11/89
RWQCB QUARTERLY SUMMARY
3RD QUARTER 1989

10/17/89

COUNTY: ALAMEDA
ENGINEER: JIM RANDALL

CHEVRON FACILITY # 95542 7007 SAN RAMON VALLEY BLVD
DUBLIN , CA

/UINVESTIGATION STATUS /W

SOIL STATUS: . . . . . .
FREE HYDROCARBON STATUS: . . . . . .
DISSOLVED HYDROCARBON STATUS: . . . . . .
INVESTIGATION RELEASED: . . . . . .
NEXT CONSULTANT REPORT DUE: . . . . . *
LATEST CONSULTANT REPORT RECEIVED: . . . .
LAST REPORT SUBMITTED TO AGENCY: . . . . .
INVESTIGATION COMPLETE: . . . . . .

/UREMEDIATION STATUS /W

SOIL STATUS: . . . . . .
FREE HYDROCARBON STATUS: . . . . . .
DISSOLVED HYDROCARBON STATUS: . . . . . .
TYPE OF RECOVERY SYSTEM: . . . . . .
REMEDIAL ACTION PLAN DUE FROM CONSULTANT: *
CONSTRUCTION OF CLEAN-UP SYSTEM STARTED:
CLEAN-UP SYSTEM START-UP: . . . . . .

/UGROUNDWATER MONITORING /W

MONITORING FREQUENCY: . . . . . .
NEXT REPORT DUE FROM CONSULTANT: . . . . . *
LATEST REPORT RECEIVED FROM CONSULTANT: . .
LAST REPORT SUBMITTED TO AGENCY: . . . . .

NEXT ACTION: REG TANK LINED AFTER HOLE FOUND 83. CORRODED REG LINES REPLACED

* DUE DATE IS THE DATE THE REPORT IS SCHEDULED TO BE RECEIVED AT CHEVRON'S OFFICE. CHEVRON WILL TAKE A REASONABLE AMOUNT OF TIME FOR INTERNAL REVIEW BEFORE A COPY OF THE REPORT WILL BE FORWARDED TO THE REGIONAL BOARD OFFICES.

REPORT NAME: ERPTQUAL