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STP469

January 16, 1996
SCI 447.055

Mr. Jonathan Redding
Fitzgerald, Abbott & Beardsley
1221 Broadway, 21st Floor
Oakland, California 94612-1837

Groundwater Monitoring
December 1995 Event
Connell Oldsmobile
3093 Broadway
Oakland, California

Dear Mr. Redding:

This letter records the results of the December 1995 groundwater monitoring event performed by Subsurface Consultants, Inc. (SCI) at the Connell Oldsmobile facility in Oakland, California. The facility is situated at the southwest corner of the intersection of Hawthorne Avenue and Broadway, as shown on the Site Plan, Plate 1.

BACKGROUND

Twelve wells have been periodically sampled at the site since 1990 to evaluate impacts to groundwater due to previous UST releases. Groundwater monitoring is performed in general accordance with the program outlined in the Corrective Action Plan (CAP) dated November 6, 1995 and approved by the Alameda County Health Care Services Agency (ACHCSA) in a letter dated November 29, 1995.

MONITORING EVENT RESULTS

A. General

In accordance with the CAP, this event was a semi-annual monitoring event. On November 30, 1995 depth-to-water and free product thickness were measured in all wells. Free product was removed by hand bailing methods from the wells in which free product was measured (wells MW-1, MW-4, and MW-6). Free product removal data area summarized in Table 3. Groundwater and free product elevation data are summarized in Table 4. Our interpretation of the flow direction and gradient for the November/December 1995 event are presented on Plate 2.

On December 4, 1995 wells MW-7, MW-8, MW-9 and MW-13 were purged by removing water with new disposable bailers (2-inch-diameter wells) or with a pre-cleaned submersible pump (6-inch-diameter wells). The wells were purged until measurements of pH, temperature, and conductivity had stabilized. After the wells recharged to within 80 percent of their initial level they were sampled with new disposable bailers. Purge water was placed in a depression created on top of the existing soil stockpile and allowed to evaporate.

Samples were retained in pre-cleaned containers supplied by the analytical laboratory, and were placed in ice-filled coolers and remained iced until delivery to the analytical laboratory. Chain-of-custody records accompanied the samples to the laboratory.

Chemical characterization testing of individual samples was performed by Curtis & Tompkins, Ltd. A summary of sample preparation and test methods are presented below.

Analysis	Sample Preparation Method	Analysis Method
Total Volatile Hydrocarbons (TVH)	EPA 5030	EPA 8015 Mod.
Total Extractable Hydrocarbons (TEH)	EPA 3550	EPA 8015 Mod.
1,2-Dichlorethane (1,2-DCA)	EPA 5030	EPA 8010
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	EPA 5030	EPA 8020
Methyl tertiary butyl ether (MTBE)	EPA 5030	EPA 8020
Organic lead Series	DHS/LUFT Manual	
Manganese	EPA 200.7	EPA 6010

Selected samples were also submitted to CytoCulture Environmental Biotechnology Laboratory for nutrient and pH tests. Analytical test results are summarized in Tables 1 and 2. Field sampling forms, analytical test reports and chain-of-custody documents are attached.

CONCLUSIONS

Free Product

The apparent lateral extent of free product has remained relatively constant when compared to the previous monitoring events. Free product continues to be present in wells MW-1, MW-4 and MW-6. During the December 1995 event, the product thickness in MW-1, located near the suspected source area, was about 0.79 feet. This thickness is greater than previous measurements, but consistent with seasonal trends in this well. The product thickness in MW-4 and MW-6 were less than during previous events. During the December event 0.34 feet and 4.4 feet of product were measured in MW-4 and MW-6, respectively.

Since the apparent free product source, i.e. the tanks and piping, have been removed, there is no indication that additional free product is impacting the site. The changes in free product thickness are, in our opinion, related to the down gradient redistribution of free product along preferential flow paths. Free product accumulation rates in various wells and migration of free product on the site is likely highly dependent on groundwater levels. The groundwater level controls whether the free product layer is in hydraulic contact with locally more permeable zones where migration occurs.

Dissolved Product Plume

The distribution of the dissolved product plume of both petroleum hydrocarbons (i.e. TVH, TEH and BTEX) remains the same as in previous events. Samples from MW-8, situated at the down gradient property boundary, continues to contain relatively low concentrations of petroleum hydrocarbons. The concentration of contaminants in MW-8 has dropped from the August 1995 event to levels consistent with past trends. Samples from MW-13, the farthest down gradient well, contained only detectable concentrations of 1,2-DCA as it did during the August 1995 event.

MTBE was not detected in samples from wells MW-1, MW-6 and MW-9. Hence, MTBE, does not appear to be a contaminant of concern and will not be added to the testing program.

Samples from wells MW-1, MW-8, MW-9 and MW-10 were sent to Cyto Culture for nutrient assay tests for ammonia, nitrate and ortho-phosphate, and pH measurements. The samples appeared to have low levels of nitrate and phosphate. Well MW-1 contained elevated levels of ammonia whereas the other samples contained low levels of ammonia. Wells MW-1 and MW-10 contained low to non-detectable populations of gasoline degrading bacteria. Gasoline degrading bacteria populations were higher in samples from MW-8 and MW-9.

Future Monitoring

The next monitoring event will be a quarterly event which will occur in March 1996.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/99)
Registered Environmental Assessor 03130 (exp. 6/30/96)

JH:RWR:JNA:sld

Attachments:

Table 1 - Summary of Contaminant Concentrations
Table 2 - Gasoline Additives in Groundwater
Table 3 - Free Product Recovery
Table 4 - Groundwater Elevation Data
Plate 1 - Site Plan
Plate 2 - Groundwater Surface Elevation Contours. 11/30/95
Field forms
Analytical test reports
Chain-of-custody documents

2 copies submitted

cc: Ms. Susan Hugo
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Table 1.
SUMMARY OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER FROM MONITORING WELLS

Well	Event Date	TVH ug/l	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l	1,2-DCA ug/l	Other Purgeable Halocarbons ug/l	Oil & Grease mg/l	Semi-volatile Compounds ug/l
MW-1	Oct-90	620,000	<500	33,000	50,000	7,900	41,000	2,900	ND	--	--
	Oct-92	490,000	--	51,000	59,000	5,000	27,000	1,300	--	--	--
	Nov-92	320,000	4,600	35,000	43,000	4,200	22,000	1,600	ND	--	--
	Apr-93	270,000	25,000	50,000	58,000	4,600	25,000	1,800	ND	--	--
	Jul-93	FP	--	--	--	--	--	--	--	--	--
	Nov-93	FP	--	--	--	--	--	--	--	--	--
	Aug-95	FP	--	--	--	--	--	--	--	10	
	Dec-95	FP	--	--	--	--	--	--	--	--	--
MW-2	Mar-91	<50	<50	<0.5	<0.5	<0.5	<0.5	ND	ND	--	--
	Nov-92	<50	<50	<0.5	1.1	<0.5	1.5	<1	ND	--	--
	Apr-93	<50	870	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Jul-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Nov-93	<50	240	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Aug-95	<50	150*	<0.5	<0.5	<0.5	<0.5	<1	--	--	--
MW-3	Mar-91	<50	<50	<50	0.6	<0.5	<0.5	ND	ND	--	--
	Nov-92	50	160	<0.5	0.9	<0.5	2	<1	ND	--	--
	Apr-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Jul-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Nov-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Aug-95	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	--	--	--

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SUMMARY OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER FROM MONITORING WELLS

Well	Event Date	TVH ug/l	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l	1,2-DCA ug/l	Other Purgeable Halocarbons ug/l	Oil & Grease mg/l	Semi-volatile Compounds ug/l
MW-4	Mar-91	150,000	<500	20,000	38,000	2,800	14,000	610	ND	--	--
	Oct-92	230,000	--	15,000	32,000	2,500	14,000	430	--	--	--
	Nov-92	210,000	1,600	14,000	31,000	2,500	14,000	500	ND	--	--
	Apr-93	FP	--	--	--	--	--	--	--	--	--
	Jul-93	FP	--	--	--	--	--	--	--	--	--
	Nov-93	FP	--	--	--	--	--	--	--	--	--
	Aug-95	FP	--	--	--	--	--	--	--	--	--
	Dec-95	FP	--	--	--	--	--	--	--	--	--
MW-5	Mar-91	<50	<50	<0.5	<0.5	<0.5	<0.5	ND	ND	--	--
	Nov-92	<50	50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Apr-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Jul-93	<50	190	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Nov-93	<50	170	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Aug-95	<50	180*	<0.5	<0.5	<0.5	<0.5	<1	--	--	--
MW-6	Mar-91	80,000	<50	12,000	13,000	1,100	5,400	1,400	Dibromochloro-methane (160)	--	--
	Oct-92	19,000	--	3,200	1,400	200	560	840	--	--	--
	Dec-92	FP	--	--	--	--	--	--	--	--	--
	Apr-93	FP	--	--	--	--	--	--	--	--	--
	Jul-93	FP	--	--	--	--	--	--	--	--	--
	Nov-93	FP	--	--	--	--	--	--	--	--	--
	Aug-95	FP	--	--	--	--	--	--	--	--	--

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SUMMARY OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER FROM MONITORING WELLS

Well	Event Date	TVH ug/l	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l	1,2-DCA ug/l	Other Purgeable Halocarbons ug/l	Oil & Grease mg/l	Semi-volatile Compounds ug/l
MW-7	Mar-91	<50	<50	<0.5	<0.5	<0.5	<0.5	ND	ND	--	--
	Nov-92	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Apr-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Jul-93	<50	150	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Nov-93	<50	200	<0.5	1	<0.5	1.7	<1	ND	--	--
	Aug-95	<50	170*	<0.5	<0.5	<0.5	<0.5	<1	--	--	--
	Dec-95	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
MW-8	Oct-92	70	--	20	1	1	3	210	--	--	--
	Nov-92	<50	170	<0.5	<0.5	<0.5	<0.5	200	ND	--	--
	Apr-93	490	100	15	45	5.1	73	210	ND	--	--
	Jul-93	180	90	2.5	3	<0.5	1.9	350	ND	--	--
	Nov-93	310	170	23	<0.5	<0.5	<0.5	240	ND	--	--
	Aug-95	660	240*	360	6.8	13	2.8	130	--	--	--
	Dec-95	250	<50	46	0.9	4.9	<0.5	94	ND	--	--
MW-9	Nov-92	19,000	320	180	590	23	2000	340	Chloroform (15)	--	--
	Apr-93	2,300	920	48	4	0.6	13	600	Chloroform (2)	--	--
	Jul-93	2,300	450	170	8.1	15	<0.5	1100	ND	--	--
	Nov-93	4,400	450	69	7.3	21	9.7	900	ND	--	--
	Aug-95	3,200	680	3,900	49	80	22.8	960	--	--	--

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SUMMARY OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER FROM MONITORING WELLS

Well	Event Date	TVH ug/l	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l	1,2-DCA ug/l	Other Purgeable Halocarbons ug/l	Oil & Grease mg/l	Semi-volatile Compounds ug/l
MW-10	Oct-92	28,000	--	2,700	3,800	210	1,300	150	--	--	--
	Nov-92	130,000	1,300	9,700	19,000	1,400	8,400	370	ND	--	--
	Apr-93	63,000	5,000	6,300	14,000	1,100	7,500	70	ND	--	--
	Jul-93	140,000	20,000	16,000	31,000	2,200	13,000	700	ND	--	--
	Aug-95	92,000	5,900	13,000	24,000	1,800	9,100	300	--	--	--
MW-11	Nov-92	<50	220	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Dec-92	<50	140	<0.1	<0.1	<0.1	<0.1	--	--	--	--
	Dec-92	<50	120	<0.5	<0.5	<0.5	<0.5	--	--	--	--
	Apr-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Jul-93	160	150	<0.5	1.8	<0.5	<0.5	<1	ND	--	--
	Nov-93	80	60	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Aug-95	<50	240*	<0.5	<0.5	<0.5	<0.5	<1	--	--	--

Table 1.
SUMMARY OF CONTAMINANT CONCENTRATIONS IN GROUNDWATER FROM MONITORING WELLS

Well	Event Date	TVH ug/l	TEH ug/l	B ug/l	T ug/l	E ug/l	X ug/l	1,2-DCA ug/l	Other Purgeable Halocarbons ug/l	Oil & Grease mg/l	Semi-volatile Compounds ug/l
MW-13	Nov-92	<50	3,600	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Dec-92	<50	210	<0.1	<0.1	<0.1	<0.1	--	--	--	--
	Dec-92	<50	100	<0.5	<0.5	<0.5	<0.5	--	--	--	--
	Apr-93	<50	<50	<0.5	0.9	<0.5	<0.5	<1	ND	--	--
	Jul-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Nov-93	<50	160	<0.5	<0.5	<0.5	<0.5	<1	ND	--	--
	Aug-95	<50	<50	49	<0.5	<0.5	<0.5	3.6	--	--	--
	Dec-95	<50	<50	<0.5	<0.5	<0.5	<0.5	4.1	ND	--	--

ug/l = micrograms per liter = parts per billion = ppb
MW-1 was initially referred to as Sample 5
ND = None detected, chemicals not present at concentrations above detection limits reported on laboratory test reports
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
* = Suspect laboratory contamination contributing to test result.
1,2-DCA = 1,2-Dichloroethane
<0.5 = Chemical not present at a concentration in excess of detection limit shown
-- = Test not requested
FP = Free product encountered in well
** = 2,4-dichlorophenol (1,700), naphthalene (1,200), 2-methylnapthalene (630), bis (2-ethylhexyl) phthalate (240) detected during August 1995 event

Table 2
GASOLINE ADDITIVES IN GROUNDWATER
FROM MONITORING WELLS

Well	MTBE ug/l	Organic Lead ug/l	Manganese ug/l
MW-1	ND	530	13000
MW-6	ND	39	ND
MW-9	ND	540	1000

ug/l = micrograms per liter = part per billion = ppb
ND = None detected, chemicals not present at concentrations above detection limits reported on laboratory test reports
MTBE = Methyl TetraButylEthylene

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Table 3
FREE PRODUCT REMOVAL

Well	Pumping Date	Product Removed (gallons)	Cumulative Product Removed (gallons)
MW-1	12/23/91	2.0	2.0
	12/26/91	0.5	2.5
	1/13/92	1.0	3.5
	2/28/92	2.0	5.5
	11/9/93	0.5	6.0
	11/3/95	0.25	6.75
	11/30/95	0.25	7.00
MW-4	12/23/91	2.5	2.5
	12/26/91	6.0	8.5
	1/10/92	5.0	13.5
	2/28/92	4.0	17.5
	3/11/92	3.5	21.0
	3/13/92	3.5	24.5
	3/17/92	2.25	26.75
	3/18/92	2.5	29.25
	3/19/92	1.5	30.75
	3/23/92	4.0	34.75
	3/24/92	1.5	36.25
	3/25/92	1.0	37.25
	3/26/92	1.0	38.25
	3/27/92	0.5	38.75
	3/31/92	0.5	39.25
	4/1/92	0.25	39.50
	4/2/92	0.13	39.63
	4/6/92	0.13	39.76
	4/10/92	0.25	40.01
	4/13/92	0.25	40.26
	4/20/92	0.13	40.39
	5/4/92	0.13	40.52
	5/18/92	0.13	40.65
	5/26/92	0.13	40.78
	6/1/92	0.06	40.84
	6/29/92	0.25	41.09
	7/29/92	1.11	42.20
	8/28/92	1.68	43.88
	4/3/93	0.13	44.01
	11/9/93	0.03	44.04
	8/30/95	1.75	45.79

Table 3
FREE PRODUCT REMOVAL

Well	Pumping Date	Product Removed (gallons)	Cumulative Product Removed (gallons)
MW-4	10/2/95	0.5	46.29
	11/3/95	0.25	46.54
	11/30/95	0.25	46.79
MW-6	12/23/91	7.5	7.5
	12/26/91	2.0	9.5
	1/10/92	1.0	10.5
	2/4/92	2.0	12.5
	2/28/92	3.0	15.5
	3/10/92	2.75	18.25
	3/12/92	2.0	20.25
	3/23/92	1.0	21.25
	3/30/92	0.5	21.75
	4/10/92	0.25	22.00
	4/13/92	0.13	22.13
	4/20/92	0.13	22.26
	5/4/92	0.13	22.39
	5/8/92	0.06	22.45
	5/26/92	0.13	22.58
	6/1/92	0.06	22.64
	6/29/92	0.19	22.83
	7/29/92	0.6	23.43
	8/28/92	2.4	25.83
	12/2/92	(obstruction in well)	
	4/3/93	1.75	27.58
	11/9/93	0.83	28.41
	8/30/95	4.5	32.91
	10/2/95	4.0	36.91
	11/3/95	3	39.91
	11/30/95	2.5	42.41

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Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-1	94.48	10/3/90	26.40	68.08		
		3/5/91	27.46	67.02		
		3/18/91	26.88	67.60		
		4/12/91	25.49	68.99		
		12/23/91	26.86	67.62	1.15	68.77
		12/26/91	26.08	68.40	0.22	68.63
		1/13/92	26.53	67.95	0.66	68.61
		2/28/92	27.75	66.73	0.42	67.15
		5/18/92	24.75	69.73		
		6/29/92	25.09	69.39	0.04	69.43
		7/29/92	25.46	69.02	0.15	69.17
		8/28/92	25.56	68.92	0.29	69.21
		10/28/92	26.44	68.04		
		11/24/92	26.63	67.85		
		12/22/92	26.37	68.11		
		4/5/93	23.77	70.71		
		7/20/93	24.51	69.97	0.60	70.57
		11/9/93	26.06	68.42	1.17	69.59
		8/30/95	21.73	72.75	0.23	72.98
		9/15/95	21.88	72.61	0.15	72.75
		10/2/95	22.42	72.06	0.42	72.48
		11/3/95	23.10	72.74	0.76	73.50
		11/30/95	23.38	72.54	0.70	73.24
MW-2	94.81	3/5/91	27.86	66.95		
		3/18/91	27.46	67.35		
		4/12/91	26.98	67.83		
		5/18/92	26.50	68.31		
		6/29/92	26.80	68.01		
		7/29/92	27.08	67.73		
		8/28/92	27.33	67.48		
		10/28/92	27.65	67.16		
		11/24/92	27.91	66.90		
		12/22/92	27.74	67.07		
		4/5/93	25.95	68.86		
		7/20/93	25.59	69.22		
		11/9/93	26.72	68.09		
		8/30/95	25.75	69.06		
		10/2/95	25.10	69.71		

Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
		11/3/95	25.73	69.02		
		11/30/95	25.34	69.41		
MW-3	90.08	3/6/91	23.17	66.91		
		3/18/91	22.76	67.32		
		4/12/91	22.51	67.57		
		5/12/92	23.17	66.91		
		6/29/92	22.90	67.18		
		7/29/92	22.17	67.91		
		8/28/92	22.28	67.80		
		10/28/92	22.67	67.41		
		11/24/92	23.01	67.07		
		12/22/92	22.91	67.17		
		4/5/93	22.11	67.97		
		7/20/93	23.93	66.15		
		11/9/93	23.14	66.94		
		8/29/95	20.61	69.47		
		10/2/95	21.18	68.90		
		11/3/95	20.74	69.60		
		11/30/95	20.68	69.66		
MW-4	88.84	3/5/91	23.79	65.05		
		3/18/91	22.30	66.54		
		4/12/91	21.85	66.99		
		12/23/91	22.63	66.22	0.98	67.19
		12/26/91	22.52	66.32	0.96	67.28
		1/10/92	22.74	66.10	0.99	67.09
		2/28/92	22.00	66.84	0.67	67.51
		3/11/92	21.71	67.13	0.55	67.68
		3/13/92	21.56	67.28	0.49	67.77
		3/17/92	25.46	63.38	0.44	63.82
		3/18/92	21.38	67.47	0.44	67.90
		3/19/92	21.33	67.51	0.48	67.99
		3/23/92	21.29	67.55	0.42	67.97
		3/24/92	21.31	67.53	0.38	67.90
		3/25/92	21.17	67.67	0.36	68.04
		3/26/92	21.08	67.76	0.35	68.11
		3/27/92	20.92	67.92	0.26	68.18
		3/31/92	21.15	67.69	0.44	68.13

Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
		4/1/92	20.90	67.94	0.24	68.18
		4/2/92	20.90	67.94	0.17	68.11
		4/10/92	20.91	67.93	0.33	68.26
		4/13/92	21.04	67.80	0.42	68.22
		11/3/95	20.74	68.10		
		11/30/95	20.68	68.16		
MW-4	88.84	4/20/92	20.74	68.10	0.19	68.29
		5/4/92	20.83	68.01	0.33	68.34
		5/18/92	21.33	67.51	0.23	67.74
		5/26/92	20.83	68.01	0.17	68.18
		6/1/92	20.85	67.99	0.19	68.17
		6/29/92	21.38	67.46	0.53	67.99
		7/29/92	21.69	67.15	0.56	67.71
		8/28/92	21.35	67.49	0.63	68.12
		10/28/92	22.48	66.36		
		11/24/92	22.60	66.24		
		12/22/92	22.47	66.37		
		4/3/93	20.11	68.73		
		7/20/93	20.48	68.36	0.52	68.88
		11/9/93	21.71	67.13	0.63	67.76
		8/30/95	19.90	68.94	2.20	71.14
		9/15/95	18.76	70.08	0.57	70.65
		10/2/95	19.17	69.67	0.65	70.32
		11/3/95	19.45	69.39	0.44	69.83
		11/30/95	19.50	69.44	0.32	69.76
MW-5	84.84	3/18/91	26.31	58.53		
		3/12/91	26.41	58.43		
		5/18/92	26.75	58.09		
		6/29/92	26.73	58.11		
		7/29/92	26.66	58.18		
		8/28/92	26.90	57.94		
		10/28/92	26.39	58.45		
		11/24/92	26.83	58.01		
		12/22/92	27.33	57.51		
		4/3/93	26.62	58.22		
		7/20/93	26.60	58.24		
		11/9/93	27.24	57.60		

Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
		8/30/95	27.46	57.38		
		10/2/95	26.85	57.99		
		11/3/95	26.67	58.87		
		11/30/95	27.05	58.49		
MW-6	85.62	3/18/91	25.82	59.80		
		4/12/91	27.23	58.39		
		12/23/91	28.40	57.22	3.21	60.44
		12/26/91	27.25	58.37	1.67	60.04
		1/10/92	27.23	58.39	0.90	59.29
		2/4/92	27.71	57.91	2.04	59.95
MW-6	85.62	2/28/92	27.92	57.70	3.00	60.70
		3/10/92	27.16	58.46	2.06	60.53
		3/12/92	25.96	59.66	0.52	60.18
		3/13/92	25.70	59.92	0.21	60.13
		3/23/92	26.34	59.28	1.09	60.37
		3/30/92	25.73	59.89	0.35	60.25
		4/10/92	25.29	60.33	0.05	60.38
		4/13/92	25.52	60.10	0.21	60.31
		4/20/92	25.38	60.25	0.10	60.35
		5/4/92	25.40	60.22		
		5/18/92	25.50	60.12	0.17	60.29
		5/26/92	25.46	60.16	0.13	60.29
		6/1/92	25.46	60.16	0.09	60.26
		6/29/92	25.59	60.03	0.14	60.17
		7/29/92	26.90	58.72	1.71	60.43
		8/28/92	25.09	60.53	2.62	63.15
		10/28/92	25.02	60.60		
		11/24/92	28.87	56.75		
		7/20/93	26.17	59.45		
		11/9/93	27.51	58.11	3.06	61.17
		8/30/95	28.00	57.62	7.96	65.58
		9/15/95	28.24	57.38	6.14	63.52
		10/2/95	28.39	57.23	6.13	63.36
		11/3/95	26.91	58.71	3.44	62.15
		11/30/95	27.58	58.04	4.41	62.45
MW-7	85.41	3/18/91	21.63	63.78		
		4/12/91	22.13	63.28		

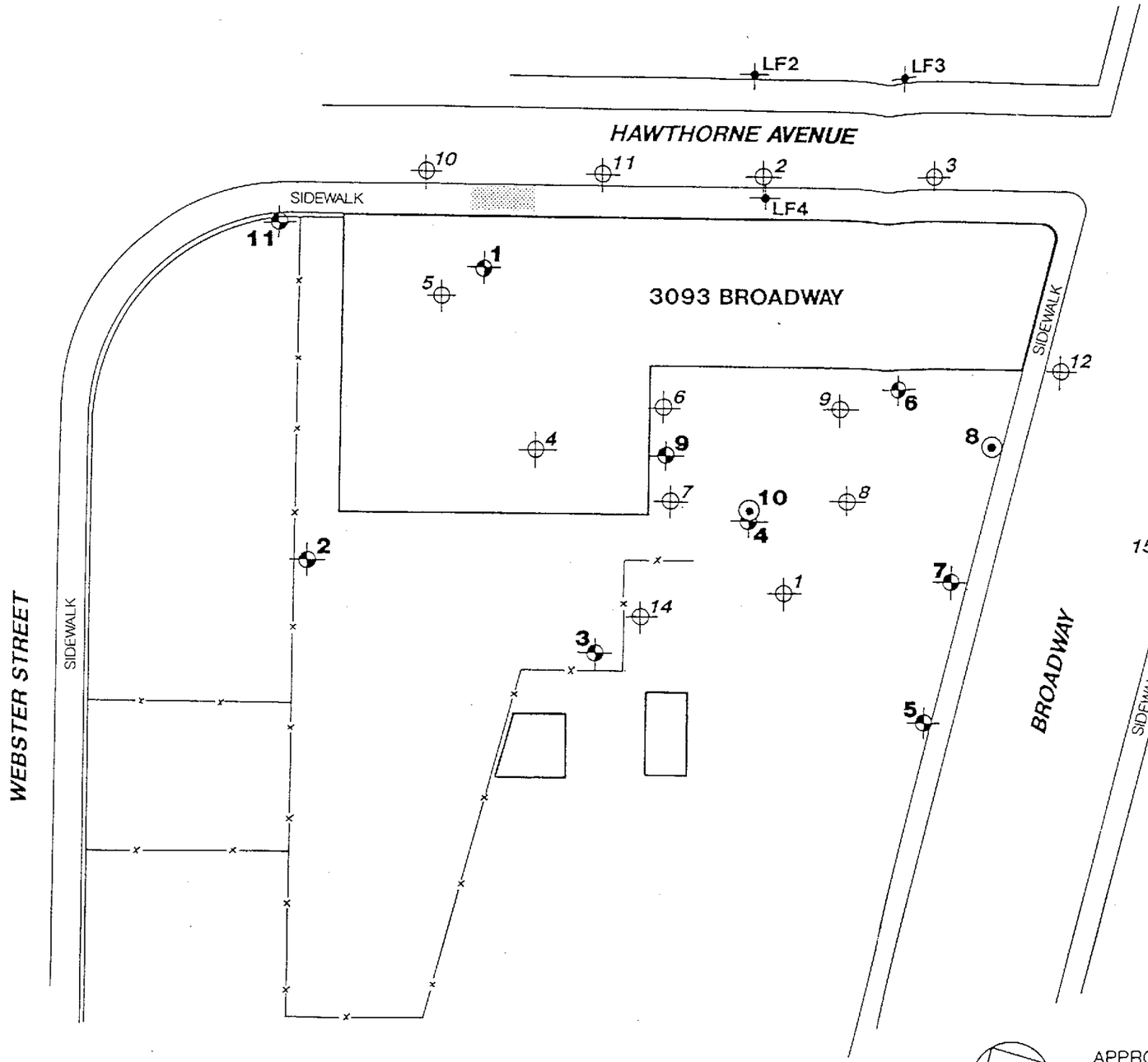
Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

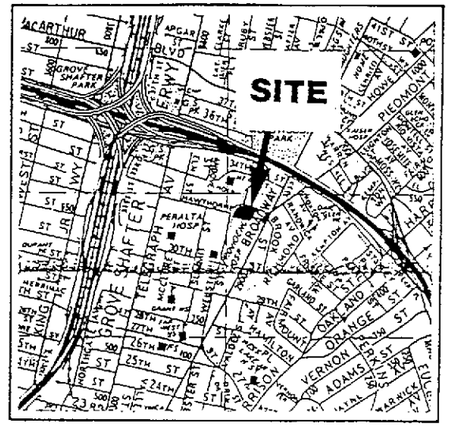
Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
		5/18/92	21.67	63.74		
		6/29/92	20.75	64.66		
		7/29/92	21.07	64.34		
		8/28/92	21.35	64.06		
		10/28/92	21.81	63.60		
		11/24/92	21.52	63.89		
		12/22/92	obstructed	-		
		4/3/93	20.08	65.33		
		7/20/93	19.59	65.82		
		11/9/93	20.65	64.76		
		8/30/95	18.78	66.63		
		10/2/95	18.73	66.68		
		11/3/95	19.23	66.18		
		11/30/95	19.47	65.94		
MW-8	85.50	10/28/92	27.70	57.80		
		11/24/92	27.62	57.88		
		12/22/92	27.40	58.10		
		4/3/93	26.64	58.86		
		7/20/93	26.60	58.90		
		11/9/93	27.18	58.32		
		8/30/95	26.35	59.15		
		10/2/95	26.60	58.90		
		11/3/95	26.62	58.88		
		11/30/95	26.72	58.78		
MW-9	90.37	10/28/92	23.37	67.00		
		11/24/92	23.51	66.86		
		12/22/92	23.31	67.06		
		4/3/93	21.14	69.23		
		7/20/93	21.54	68.83		
		11/9/93	27.53	62.84		
		8/30/95	19.59	70.78		
		10/2/95	20.05	70.32		
		11/3/95	20.40	69.97		
		11/30/95	20.65	69.72		
MW-10	88.60	10/28/92	21.55	67.05		
		11/24/92	21.86	66.74		

Table 4
GROUNDWATER AND FREE PRODUCT ELEVATION DATA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
		12/22/92	21.68	66.92		
		4/3/93	19.14	69.46		
		7/20/93	19.79	68.81		
		11/9/93	20.83	67.77		
		8/30/95	17.99	70.61		
		10/2/95	18.42	70.18		
		11/3/95	18.82	69.78		
		11/30/95	19.03	69.57		
MW-11	102.06	11/24/92	33.65	68.41		
		12/22/92	33.37	68.69		
		4/5/93	31.03	71.03		
		7/20/93	31.90	70.16		
		11/9/93	32.60	69.46		
		8/29/95	28.92	73.14		
		10/2/95	29.48	72.58		
		11/3/95	29.73	72.33		
		11/30/95	30.26	71.80		
MW-13	84.06	11/24/92	26.05	58.01		
		12/22/92	25.08	58.98		
		4/5/93	24.64	59.42		
		7/20/93	24.29	59.77		
		11/9/93	24.23	59.83		
		8/29/95	23.30	60.76		
		10/2/95	23.78	60.28		
		11/3/95	23.73	60.33		
		11/30/95	23.80	60.26		

Reference datum: arbitrary benchmark established by Levine Fricke.
TOC = Top of casing
Groundwater depths are measured below TOC.





VICINITY MAP

- SCI TEST BORING
- SCI MONITORING WELL
- EXTRACTION WELL
- LEVINE FRICKE MONITORING WELL
- CONE PENETRATION TEST (CPT)
- FENCE
- RETAINING WALL
- GROUNDWATER CONTOUR
- FORMER TANK LOCATION

APPROXIMATE SCALE (feet)

0 60 120

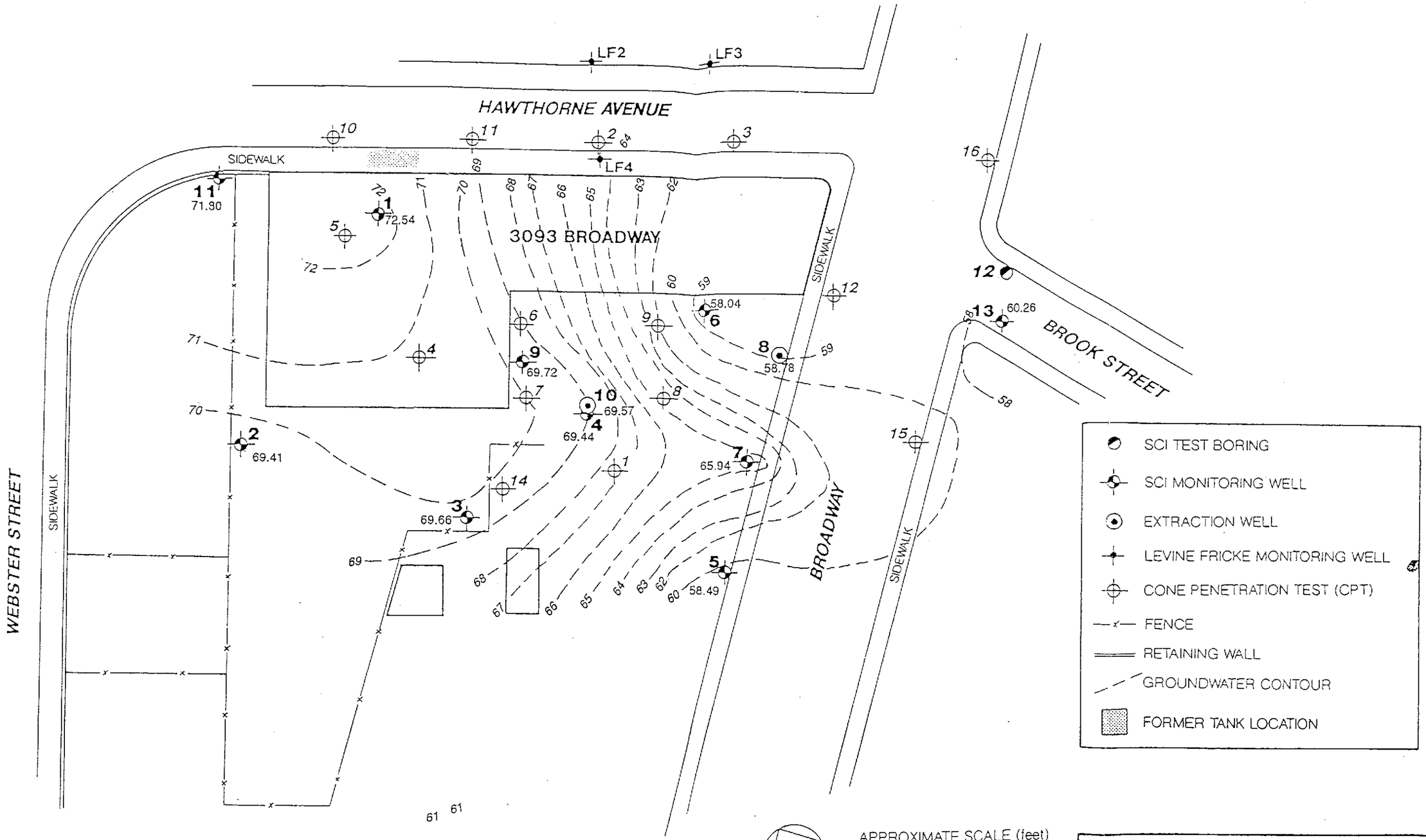
SITE PLAN

Subsurface Consultants

CONNELL OLDSMOBILE – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
447.055	9/14/95	

PLATE 1



NOTE: GROUNDWATER DATA ELEVATIONS FOR MW-1, MW-4 AND MW-6 WERE NOT USED IN ESTIMATING GROUNDWATER SURFACE DUE TO THE PRESENCE OF FLOATING PRODUCT IN THE WELLS.

Subsurface Consultants

GROUNDWATER SURFACE ELEVATION CONTOURS 11/30/95

CONNELL OLDSMOBILE – OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
447.055	1/15/96		2

GROUNDWATER DEPTHS

Project Name: Connell Olds

Job No.: 447.055

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-1	11/30/95	14:20	23'4½"	Product level = 22'8⅛" Product thickness = 8⅜" DO = 1.3 ppm Bailed - 1 liter
MW-2		12:45	25.34	Dissolved oxygen = 5.8 ppm
MW-3		12:20	20.68	Dissolved oxygen = 7.6 ppm
MW-4		14:30	19'6"	Product level = 19'2⅛" Product thickness = 3⅜" DO = 3.6 ppm Bailed - ¼ liter
MW-5		13:00	27.05	Dissolved oxygen = 4.2 ppm
MW-6		14:45	27'7"	Product level = 23'2 3/16" Product thickness = 4'4 13/16" DO = 3.3 ppm Bailed - 2.5 gallons
MW-7		13:20	19.47	Dissolved oxygen = 4.1 ppm
MW-8		13:40	26.72	Dissolved oxygen = 2.7 ppm
MW-9		13:55	20.65	Dissolved oxygen = 2.2 ppm
MW-10		14:05	19.03	Dissolved oxygen = 1.3 ppm
MW-11		12:05	30.26	Dissolved oxygen = 3.2 ppm
MW-13		11:40	23.80	Dissolved oxygen = 3.6 ppm

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-1
Job No.: 447.055
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 12/4/95
TOC Elevation:
Weather: Foggy/drizzle

Depth to Casing Bottom (below TOC) 35.00 feet
Depth to Groundwater (below TOC) 23.38 feet
Feet of Water in Well 11.62 feet
Depth to Groundwater When 80% Recovered 25.70 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.9 gallons
Depth Measurement Method (Tape & Paste) / (Electronic Sounder) / Other
Free Product yes
Purge Method disposable bailer

moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	7.07	66.9	1700		clear/strong odor
4	7.06	65.3	1350		↓
6	6.92	64.9	1300		semi-clear

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 25.70 feet
Sampling Method disposable bailer
Containers Used 2 (40 ml) 2 (liter) (pint)

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-7
Job No.: 447.055
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 12/1/95
TOC Elevation:
Weather: foggy / drizzle

Depth to Casing Bottom (below TOC) 30.00 feet
Depth to Groundwater (below TOC) 19.47 feet
Feet of Water in Well 10.53 feet
Depth to Groundwater When 80% Recovered 21.58 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.72 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.55	64.8	850		clear/no odor
2	7.45	64.8	860		↓
4	7.38	64.3	910		semi-clear
6	7.33	64.1	870		murky

Total Gallons Purged 6 gallons
Depth to Groundwater Before Sampling (below TOC) 21.58' feet
Sampling Method disposable bailer
Containers Used 4 (40 ml) 1 (liter) (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-8
Job No.: 447.055
Well Casing Diameter: 6 inch
Sampled By: DWA
Date: 12/4/95
TOC Elevation:
Weather: Foggy / drizzle

Depth to Casing Bottom (below TOC) 39.50 feet
Depth to Groundwater (below TOC) 26.72 feet
Feet of Water in Well 12.78 feet
Depth to Groundwater When 80% Recovered 29.28 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 18.8 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method submersible pump

FIELD MEASUREMENTS

moderate Recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
10	7.20	67.9	1120		clear/slight odor spotty sheen
20	6.97	68.1	1000		↓
30	6.87	67.6	1000.		murky - decreasing odor
40	6.96	67.3	1000		DRY @ 40 gallons Wet Recharge
50	7.23	65.8	1130		

Total Gallons Purged 55 gallons
Depth to Groundwater Before Sampling (below TOC) 29.28 feet
Sampling Method disposable bailer
Containers Used 4 (40 ml) 2 (liter) (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-9
Job No.: 447.055
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 12/4/95
TOC Elevation:
Weather: foggy / drizzle

Depth to Casing Bottom (below TOC) 30.50 feet
Depth to Groundwater (below TOC) 20.65 feet
Feet of Water in Well 9.85 feet
Depth to Groundwater When 80% Recovered 22.62 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.6 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	4.90	65.9	890		Semi-clear/strong odor sheen
2	6.60	65.9	960		
3	6.64	65.1	960		murky/dry @ 3 gallon
4	7.06	63.9	910		clear
5	6.84	64.7	915		murky

Total Gallons Purged 5 gallons
Depth to Groundwater Before Sampling (below TOC) 22.62 feet
Sampling Method disposable bailer
Containers Used 2 (40 ml) 2 (liter) (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-10
Job No.: 447.055
Well Casing Diameter: 6 inch
Sampled By: DWA
Date: 12/4/95
TOC Elevation:
Weather: foggy / drizzle

Depth to Casing Bottom (below TOC) 34.50 feet
Depth to Groundwater (below TOC) 19.03 feet
Feet of Water in Well 15.47 feet
Depth to Groundwater When 80% Recovered 22.15 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 22.7 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method submersible pump

FIELD MEASUREMENTS

fast recharge

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
20	7.48	66.0	810		semi-clear / strong odor sheen
30	7.15	67.1	840		
40	7.05	67.5	915		
50	7.05	67.8	920		
60	7.10	67.8	960		

Total Gallons Purged 70 gallons
Depth to Groundwater Before Sampling (below TOC) 19.50' feet
Sampling Method disposable bailer
Containers Used ____ 40 ml / 1 liter / ____ pint

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-13
Job No.: 447.055
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 12/1/95
TOC Elevation:
Weather: foggy / drizzle

Depth to Casing Bottom (below TOC) 40.00 feet
Depth to Groundwater (below TOC) 23.80 feet
Feet of Water in Well 16.20 feet
Depth to Groundwater When 80% Recovered 27.04 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.7 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

fast/moderate recharge

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	7.90	65.3	3100		clear/no odor
3	7.54	65.0	1000		↓
5	7.39	64.5	910		semi-clear
7	7.30	63.6	760		murky
9	7.11	62.8	860		↓

Total Gallons Purged 9 gallons
Depth to Groundwater Before Sampling (below TOC) 27.04 feet
Sampling Method disposable bailer
Containers Used 4 (40 ml) / 1 (liter) / (pint)

Subsurface Consultants

JOB NUMBER | DATE | APPROVED | PLATE

Subsurface Consultants, Inc.

EXPENSE RECORD for SCI FIELD SERVICES and FIELD SUPPLIES

PROJECT NAME: Connell Olds	JOB NUMBER: 447.055	DATE SUBMITTED: 12/5/95
SUBMITTED BY: D. Alexander	ENTERED BY:	

TYPE OF FIELD SUPPLY/FIELD SERVICE	UNIT NUMBER	NUMBER OF UNITS/DAYS	COST
			$
Bailers	53023	10	80.00
PH/Meter	53009	2	20.00
Generator	53001	1	25.00
Submersible Pump	53011	1	25.00

FILE COPY

SCI FIELD SUPPLIES

Unit No.	Unit Name	Billing Per Unit	Cost Per Unit
53020	Plastic Sheet (20x100')	per roll	$100.00
53021	Plastic Sheet (10x100' or 20x50')	per roll	50.00
53022	Brass Liners	each	5.00
53023	Disposable Bailers	each	8.00
53024	Keyed-Alike Locks	each	8.00
53025	Zip-Lock Bags - quart	per box	2.00
53026	Zip-Lock Bags - gallon	per box	4.00
53027	Portland Cement - 94#	sack	8.95
53028	Concrete Mix - 90#	sack	4.05
53029	Asphalt Mix - 90#	sack	5.01
53030	Bentonite Gel - 1#	sack	6.10
53031	Bentonite Pellets - 1/4"	bucket	39.84
53032	Bentonite Pellets - 3/8"	bucket	32.37
53033	Bentonite Pellets - 1/2"	bucket	28.64
53034	Sand - #3	sack	7.12
53035	2" PVC Slip Cap	each	.94
53036	2" PVC Screw Cap	each	7.51
53037	2" Locking Cap	each	22.91
53038	4" PVC Slip Cap	each	7.53
53039	4" PVC Screw Cap	each	13.25
53040	4" Locking Cap	each	24.93

Unit No.	Unit Name	Billing Per Unit	Cost Per Unit
53041	2" PVC Blank Pipe - 5' section	per foot	3.11
53042	2" PVC Blank Pipe - 10' section	per foot	2.05
53043	2" PVC Screen Pipe - 5' section	per foot	4.32
53044	2" PVC Screen Pipe - 10' section	per foot	3.05
53045	4" PVC Blank Pipe - 5' section	per foot	6.24
53046	4" PVC Blank Pipe - 10' section	per foot	4.89
53047	4" PVC Screen Pipe - 5' section	per foot	8.92
53048	4" PVC Screen Pipe - 10' section	per foot	7.10
53049	55 Gallon Drum	each	43.57
53050	Slope Indicator Casing	10-foot sec	65.98
53051	Coupling	each	5.29
53052	End Cap	each	3.73

FIELD SERVICES

53001	Generator	$25/day
53002	Steam Cleaner	$75/day
53003	Inclinometer	$150/day
53004	Rotary Hammer	$25/day
53005	Hand Pump	$10/day
53006	Nitrogen Pump	$50/day
53007	OVM	$25/day
53008	Gas Tech	$25/day
53009	PH Meter	$10/day
53010	Conductivity Meter	$10/day
53011	Submersible Pump	$25/day

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 21-DEC-95
Lab Job Number: 123585
Project ID: 447.055
Location: Connell Olds

Reviewed by: Teresa K Morrison

Reviewed by:

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
123585-003	MW-7	24669	12/01/95	12/05/95	12/05/95	
123585-004	MW-8	24669	12/04/95	12/05/95	12/05/95	
123585-006	MW-13	24669	12/01/95	12/05/95	12/05/95	

Analyte	Units	123585-003	123585-004	123585-006
Diln Fac:		1	1	1
Gasoline	ug/L	<50	250	<50
Surrogate				
Trifluorotoluene	%REC	107	106	108
Bromobenzene	%REC	99	100	96

BTXE

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: BTXE
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
123585-003	MW-7	24669	12/01/95	12/05/95	12/05/95	
123585-004	MW-8	24669	12/04/95	12/05/95	12/05/95	
123585-006	MW-13	24669	12/01/95	12/05/95	12/05/95	

Analyte	Units	123585-003	123585-004	123585-006
Diln Fac:		1	1	1
Benzene	ug/L	<0.5	46	<0.5
Toluene	ug/L	<0.5	0.9	<0.5
Ethylbenzene	ug/L	<0.5	4.9	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5
Surrogate				
Trifluorotoluene	%REC	113	115	114
Bromobenzene	%REC	106	103	102

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 24669
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

MB Lab ID: QC10111

Analyte	Result	
Gasoline	<50	
Surrogate	**%Rec**	**Recovery Limits**
Trifluorotoluene	97	69-120
Bromobenzene	86	70-122

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: BTXE
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 24669
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

MB Lab ID: QC10111

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	101	58-130
Bromobenzene	89	62-131

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 24669
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

LCS Lab ID: QC10109

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1862	2006	93	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	105	69-120		
Bromobenzene	88	70-122		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: BTXE
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 24669
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

LCS Lab ID: QC10110

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	19.3	20	97	80-120
Toluene	19.4	20	97	80-120
Ethylbenzene	19.2	20	96	80-120
m,p-Xylenes	38.5	40	96	80-120
o-Xylene	20.3	20	102	80-120

Surrogate	%Rec	Limits
Trifluorotoluene	97	58-130
Bromobenzene	77	62-131

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 123585 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 123563-003
Matrix: Water
Batch#: 24669
Units: ug/L
Diln Fac: 1

Sample Date: 12/01/95
Received Date: 12/01/95
Prep Date: 12/05/95
Analysis Date: 12/05/95

MS Lab ID: QC10112

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2006	489.2	2261	88	75-125
Surrogate	**%Rec**	**Limits**			
Trifluorotoluene	107	69-120			
Bromobenzene	102	70-122			

MSD Lab ID: QC10113

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2006	2408	96	75-125	6	<20
Surrogate	**%Rec**	**Limits**				
Trifluorotoluene	109	69-120				
Bromobenzene	98	70-122				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
123585-003	MW-7	24680	12/01/95	12/05/95	12/07/95	
123585-004	MW-8	24680	12/04/95	12/05/95	12/07/95	
123585-006	MW-13	24680	12/01/95	12/05/95	12/07/95	

Analyte	Units	123585-003	123585-004	123585-006
Diln Fac:		1	1	1
Diesel Range	ug/L	<50	<50	<50
Surrogate				
Hexacosane	%REC	102	102	96

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: 3510

METHOD BLANK

Matrix: Water
Batch#: 24680
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/07/95

MB Lab ID: QC10155

Analyte	Result	
Diesel Range	<50	
Surrogate	%Rec	Recovery Limits
Hexacosane	107	60-140

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: 3510

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 24680
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/07/95

BS Lab ID: QC10156

Analyte	Spike Added	BS	%Rec #	Limits
Diesel Range	2565	2142	84	60-140
Surrogate	%Rec	Limits		
Hexacosane	103	60-140		

BSD Lab ID: QC10157

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel Range	2565	2615	102	60-140	20	<35
Surrogate	%Rec	Limits				
Hexacosane	106	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 123585-002
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 447.055
LOCATION: CONNELL OLDS
SAMPLE ID: MW-6

DATE SAMPLED: 12/01/95
DATE RECEIVED: 12/04/95
DATE ANALYZED: 12/05/95
DATE REPORTED: 12/18/95
BATCH NO: 24656

EPA 8010 Compound List by EPA 8240
Volatile Halocarbons in Soil & Wastes

Compound	RESULT mg/Kg	REPORTING LIMIT * mg/Kg
Chloromethane	ND	200
Bromomethane	ND	200
Vinyl chloride	ND	200
Chloroethane	ND	200
Methylene chloride	ND	400
Trichlorofluoromethane	ND	100
1,1-Dichloroethene	ND	100
1,1-Dichloroethane	ND	100
cis-1,2-Dichloroethene	ND	100
trans-1,2-Dichloroethene	ND	100
Chloroform	ND	100
Freon 113	ND	100
1,2-Dichloroethane	Detected(71)	100
1,1,1-Trichloroethane	ND	100
Carbon tetrachloride	ND	100
Bromodichloromethane	ND	100
1,2-Dichloropropane	ND	100
cis-1,3-Dichloropropene	ND	100
Trichloroethene	ND	100
1,1,2-Trichloroethane	ND	100
trans-1,3-Dichloropropene	ND	100
Dibromochloromethane	ND	100
Bromoform	ND	200
Tetrachloroethylene	ND	100
1,1,2,2-Tetrachloroethane	ND	100
Chlorobenzene	ND	100
1,3-Dichlorobenzene	ND	100
1,2-Dichlorobenzene	ND	100
1,4-Dichlorobenzene	ND	100

ND = Not detected at or above reporting limit.
* Raised detection limits due to high hydrocarbon concentration.

SURROGATE RECOVERIES	
1,2-Dichloroethane-d4	97 %
Toluene-d8	101 %
Bromofluorobenzene	104 %

Curtis & Tompkins, Ltd.

Lab #: 123585 BATCH QC REPORT

Halogenated Volatile Organics
EPA 8010 Analyte List

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 24656
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

MB Lab ID: QC10068

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Rec	Recovery Limits
Toluene-d8	99	87-125
Bromofluorobenzene	97	79-122
1,2-Dichloroethane-d4	97	68-126

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

Halogenated Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8240
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 213403-002
Matrix: Water
Batch#: 24656
Units: ug/L
Diln Fac: 1

Sample Date: 11/30/95
Received Date: 11/30/95
Prep Date: 12/05/95
Analysis Date: 12/05/95

MS Lab ID: QC10135

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	0.8303	54.65	108	51-180
Trichloroethene	50	35.13	78.93	88	73-141
Chlorobenzene	50	0	48.28	97	83-129

Surrogate	%Rec	Limits
Toluene-d8	101	87-125
Bromofluorobenzene	100	79-122
1,2-Dichloroethane-d4	100	68-126

MSD Lab ID: QC10136

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	54.48	107	51-180	0	<22
Trichloroethene	50	78.13	86	73-141	1	<24
Chlorobenzene	50	48.68	97	83-129	1	<21

Surrogate	%Rec	Limits
Toluene-d8	101	87-125
Bromofluorobenzene	99	79-122
1,2-Dichloroethane-d4	101	68-126

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 3 outside limits
Spike Recovery: 0 out of 6 outside limits

Halogenated Volatile Organics
EPA 8010 Analyte List

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8010
Prep Method: EPA 5030

Field ID: MW-7
Lab ID: 123585-003
Matrix: Water
Batch#: 24629
Units: ug/L
Diln Fac: 1

Sampled: 12/01/95
Received: 12/04/95
Extracted: 12/06/95
Analyzed: 12/06/95

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
Bromobenzene	102	85-119

Halogenated Volatile Organics
EPA 8010 Analyte List

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8010
Prep Method: EPA 5030

Field ID: MW-8
Lab ID: 123585-004
Matrix: Water
Batch#: 24629
Units: ug/L
Diln Fac: 1

Sampled: 12/04/95
Received: 12/04/95
Extracted: 12/06/95
Analyzed: 12/06/95

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	94	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
Bromobenzene	95	85-119

Halogenated Volatile Organics
EPA 8010 Analyte List

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8010
Prep Method: EPA 5030

Field ID: MW-13
Lab ID: 123585-006
Matrix: Water
Batch#: 24629
Units: ug/L
Diln Fac: 1

Sampled: 12/01/95
Received: 12/04/95
Extracted: 12/06/95
Analyzed: 12/06/95

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	4.1	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Recovery	Recovery Limits
Bromobenzene	105	85-119

Curtis & Tompkins, Ltd.

Lab #: 123585 BATCH QC REPORT

EPA 8010 Purgeable Halocarbons
EPA 8010 Analyte List

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8010
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 24629
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

MB Lab ID: QC09979

Analyte	Result	Reporting Limit
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl Chloride	ND	2.0
Chloroethane	ND	2.0
Methylene Chloride	ND	20
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%Rec	Recovery Limits
Bromobenzene	109	85-119

Curtis & Tompkins, Ltd.

Lab #: 123585

BATCH QC REPORT

EPA 8010 Purgeable Halocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8010
Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 24629
Units: ug/L
Diln Fac: 1

Prep Date: 12/05/95
Analysis Date: 12/05/95

BS Lab ID: QC09977

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	20	21.2	106	68-134
Trichloroethene	20	20.44	102	85-141
Chlorobenzene	20	20.17	101	69-135

Surrogate	%Rec	Limits
Bromobenzene	102	85-119

BSD Lab ID: QC09978

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	20	18.95	95	68-134	11	<14
Trichloroethene	20	18.49	92	85-141	10	<14
Chlorobenzene	20	17.4	87	69-135	15 *	<13

Surrogate	%Rec	Limits
Bromobenzene	103	85-119

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 1 out of 3 outside limits
Spike Recovery: 0 out of 6 outside limits

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 123585
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 447.055
LOCATION: CONNELL OLDS

DATE SAMPLED: 12/01/95
DATE RECEIVED: 12/04/95
DATE ANALYZED: 12/08/95
DATE REPORTED: 12/18/95
BATCH NO: 24736

ANALYSIS: MTBE
ANALYSIS METHOD: EPA 8020

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
123585-002	MW-6	ND	ug/Kg	8,000,000
Method Blank	N/A	ND	ug/Kg	20

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: BS/BSD

RPD, %	5
RECOVERY, %	102

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 123585
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 447.055
LOCATION: CONNELL OLDS

DATE SAMPLED: 12/04/95
DATE RECEIVED: 12/04/95
DATE ANALYZED: 12/07/95
DATE REPORTED: 12/18/95
BATCH NO: 24724

ANALYSIS: MTBE
ANALYSIS METHOD: EPA 8020

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
123585-001	MW-1	ND	ug/L	200.0
123585-005	MW-9	ND	ug/L	2.0
Method Blank	N/A	ND	ug/L	2.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: LCS

RECOVERY, %	105

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 123585
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 447.055
LOCATION: CONNELL OLDS

DATE SAMPLED: 12/01/95
DATE RECEIVED: 12/04/95
DATE ANALYZED: 12/13/95
DATE REPORTED: 12/18/95
BATCH NO: 24740

ANALYSIS: ORGANIC LEAD
ANALYSIS METHOD: DHS LUFT

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
123585-002	MW-6	39	mg/Kg	1.3
METHOD BLANK	N/A	ND	mg/Kg	1.3

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: LCS

RECOVERY, %	109

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 123585
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 447.055
LOCATION: CONNELL OLDS

DATE SAMPLED: 12/04/95
DATE RECEIVED: 12/04/95
DATE ANALYZED: 12/08/95
DATE REPORTED: 12/18/95
BATCH NO: 24737

ANALYSIS: ORGANIC LEAD
ANALYSIS METHOD: DHS LUFT

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
123585-001	MW-1	530	ug/L	100
123585-005	MW-9	540	ug/L	100
METHOD BLANK	N/A	ND	ug/L	100

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: BS/BSD

RPD, %	5
RECOVERY, %	118

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-1
LAB ID: 123585-001
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Water

DATE SAMPLED: 12/04/95
DATE RECEIVED: 12/04/95
DATE REPORTED: 12/18/95

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
Manganese	13000	10	24715	EPA 6010A	12/07/95

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-6
LAB ID: 123585-002
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Miscell.

DATE SAMPLED: 12/01/95
DATE RECEIVED: 12/04/95
DATE REPORTED: 12/21/95

Metals Analytical Report

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Manganese	ND	0.50	24733	EPA 6010A	12/11/95

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-9
LAB ID: 123585-005
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Water

DATE SAMPLED: 12/04/95
DATE RECEIVED: 12/04/95
DATE REPORTED: 12/21/95

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
Manganese	1000	10	24715	EPA 6010A	12/07/95

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 123585

DATE REPORTED: 12/18/95

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Manganese	ND	10	ug/L	24715	EPA 6010A	12/07/95
Manganese	ND	0.5	mg/Kg	24733	EPA 6010A	12/11/95

ND = Not Detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 123585

DATE REPORTED: 12/18/95

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Manganese	500	471	478	ug/L	94	96	95	2	24715	EPA 6010A	12/07/95
Manganese	500	474	481	ug/L	95	96	96	2	24733	EPA 6010A	12/11/95

CHAIN OF CUSTODY FORM

123580

PAGE ____ OF ____

PROJECT NAME: Connell old's
JOB NUMBER: 447.055
PROJECT CONTACT: Jeri Alexander
SAMPLED BY: Dennis Alexander

LAB: Curtis & Tompkins
TURNAROUND: Normal
REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	Product	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TVH/BTXE	TEH	DCA	MTBE	Dissolved Solics	Manganese
-1	MW-1						2	1						X		12	04	95	0900	X	X	X	X	X	X	X
-2	MW-6					X	2							X		12	01	95	1015	X	X	X	X	X	X	X
-3	MW-7						4	1						X		12	01	95	1000		X	X	X			
-4	MW-8						4	1						X		12	04	95	1030		X	X	X			
-5	MW-9						2	1						X		12	04	95	1215	X	X	X	X	X	X	X
-6	MW-13						4	1						X		12	01	95	0800		X	X	X			

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	12/4/95 2:40 pm	Damara Moore	12-4 2:46
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: X - CALL JNA BEFORE RUNNING ANALYSIS

Subsurface Consultants, Inc.
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