



Subsurface Consultants, Inc.

ENVIRONMENTAL
PROTECTION

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January 20, 1999
SCI 133.009

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**Groundwater Monitoring Report
September 1998 Event
Ninth Avenue Terminal
Oakland, California**

Dear Mr. Chan:

This letter transmits the results of the September 1998 groundwater monitoring event conducted at the above-referenced site by Subsurface Consultants, Inc. (SCI). The location of the site is shown on Plate 1. Previous site characterization studies indicate that soil and groundwater throughout the Ninth Avenue Terminal area have been impacted by petroleum hydrocarbons as well as other potentially hazardous chemicals and metals. Monitoring is being performed on a quarterly basis in general accordance with SCI's Work Plan dated August 5, 1998, as approved by Alameda County Health Care Services Agency (ACHCSA) in their letter dated September 18, 1998. The groundwater monitoring program is outlined in the attached Table 1. Copies of the SCI work plan and memorandum, and the county approval letter are presented in Appendix A.

GROUNDWATER MONITORING

On September 17 through 25, and on October 10, 1998, the annual groundwater monitoring event was performed. As requested by ACHCSA, redox potential (Eh) and dissolved oxygen (DO) readings were obtained. Monitoring was performed in accordance with EPA protocols and industry standards of practice.

This monitoring event included obtaining samples from 39 of the 42 on-site wells, as designated in Table 1. Prior to sampling, the selected wells were checked for the presence of free floating product using a steel tape coated with petroleum sensitive paste and the depth to groundwater below top of casing was measured in all site wells with an electric well sounder. **Free floating product detected in wells MW-4 and MW-6 was removed, placed in 55-gallon drums and stored onsite for later transport and disposal by a licensed hazardous waste hauler to be retained by the Port.** Due to the presence of free product, these wells were not purged or sampled. All equipment used during the event was thoroughly decontaminated between each use.

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Disposable bailers were used for purging. The pH, specific conductance, and temperature of the purged water were measured after each well volume was removed. The wells were considered purged when these environmental parameters had stabilized. A minimum of three well volumes of water were purged from each well. Water generated during purging was placed into 55-gallon steel drums, labeled, and stored on-site. Integrated Waste Management, a licensed hazardous waste hauler, removed the purge water, under manifest, on December 14, 1998. A Well Sampling Form was completed for each well sampled during the event; forms are included in Appendix B. The purge water manifests are presented in Appendix B.

Groundwater samples were retained in glass and polyethylene containers pre-cleaned by the supplier in accordance with EPA protocol. The filled sample containers were placed in ice filled chests and remained iced until delivery to the analytical laboratory. The laboratory conducted all requested filtering. Chain-of-custody records accompanied the samples to the laboratory.

ANALYTICAL TESTING

In general, the analytical testing program is focused to evaluate potential impacts to groundwater from known source areas and contaminants of concern detected in soil and groundwater to date. The program also includes (1) screening selected samples for environmental parameters (pH, Eh, DO, total dissolved solids (TDS), and dissolved organic carbon) to monitor conditions of the various plumes and (2) analyzing both filtered and unfiltered samples for polynuclear aromatic hydrocarbons to provide adequate data for the evaluation of potential ecological risks.

In general, the chemical testing program includes screening selected samples for the following.

- Full range of petroleum hydrocarbon analytes. Impacts from former releases of gasoline, diesel, motor oil, waste oil, oil and grease, cutting oils, and asphalt products have been detected widespread at the site. The total extractable hydrocarbon analyses were performed following a silica gel clean-up procedure conducted by the laboratory to remove potential interference due to the presence of naturally occurring hydrocarbons.
- Volatile organic compounds (VOCs). Acetone has been detected widespread at the site without a known source being identified to date. Chlorinated solvents historically were used and stored in a variety of locations and have been detected in the "oil filled manhole" and in specific source areas.
- Polynuclear aromatic hydrocarbons (PNAs). Various polynuclear aromatic hydrocarbons have been detected in soil and groundwater in specific source areas. These compounds are known to bioaccumulate and therefore present a risk to human health and the ecological environment through a variety of exposure pathways. Both filtered and unfiltered samples were analyzed to assist in this evaluation.

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- Chlorinated pesticides and polychlorinated biphenyls (PCBs). Chlorinated pesticides have been detected in known source areas at the site where pesticide formulation and transportation were performed. PCBs have been detected where cutting oils were likely used and where waste oil products were stored.
- Heavy metals. A variety of heavy metals have been detected across the site. These metals are known to bioaccumulate and therefore present a risk to human health and the ecological environment through a variety of exposure pathways.

Analytical testing was performed by Curtis & Tompkins, Ltd., a State of California Department of Health Services certified analytical laboratory, and by CytoCulture International, an environmental microbiology testing laboratory.

Analytical test results are presented in Tables 2 through 8. These tables are comprehensive as they present all data generated for site wells to date. Analytical test reports and chain-of-custody forms are included in Appendix C.

DISCUSSION

Groundwater Elevation and Flow Patterns

The approximate groundwater elevation contours, based on water levels measured on September 17, 1998, are presented on Plate 2. Groundwater elevation contour patterns have remained relatively consistent throughout SCI's studies. A summary of groundwater elevation data is presented in Table 9.

In general, groundwater elevations tend to be higher in the central portion of the site with flow radiating outward toward the shorelines of Clinton Basin and Brooklyn Basin. The bulkhead wall extending along the southeastern and southwestern portions of the site acts as an inhibitor to a direct connection between groundwater beneath the site and surface waters of the Inner Harbor Channel. The contours also indicate that groundwater migrates to the open shorelines around the bulkhead wall.

The tidal fluctuation during this event was approximately 2 feet. Wells located along the Clinton and Brooklyn Basin shorelines are tidally influenced, while interior wells and those adjacent to the concrete bulkhead are not. Groundwater level measurements were obtained from tidally influenced wells first to minimize the potential significance in elevation differences.

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Analytical Data

Ecological parameters are summarized in Table 2. These parameters are being documented to assist in trend analysis. A discussion of apparent trends will be included in all subsequent reports.

Petroleum hydrocarbon, pesticide and PCB concentrations are summarized in Table 3. In general, TEH concentrations have decreased significantly over those detected previously at sampling locations throughout the site. TVH, BTEX, pesticide and PCB concentrations for this event are similar to those detected previously.

VOC, SVOC, PNA and heavy metal concentrations are presented in Tables 4, 5, 6, and 7, respectively. Concentrations of these compounds for this event are similar to those detected previously.

Table 8 includes historic data for cyanide, nitrate and phosphorus. No samples were analyzed for these compounds during this event and none are anticipated for future events. These data are presented herein to keep the entirety of analytical data for the monitoring wells intact.

ONGOING MONITORING

In accordance with the approved program, the next sampling event will be a quarterly event performed during December 1998. During this event, water levels, sampling, and analytical testing will be performed as outlined in Table 1. Results of the quarterly event will be presented in a written report.

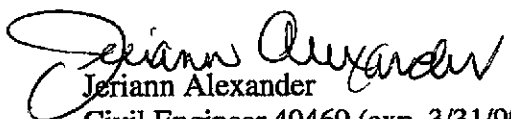
If you have any questions, please call either of the undersigned at (925) 299-7960.

Yours very truly,

Subsurface Consultants, Inc.



Meg Mendoza
Project Engineer



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

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Tables:

- Table 1 - Groundwater Monitoring Program
- Table 2 - Ecological Parameter Results in Groundwater
- Table 3 - Petroleum Hydrocarbon, BTEX, Pesticide and PCB Concentrations in Groundwater
- Table 4 - Volatile Organic Concentrations in Groundwater
- Table 5 - Semi-Volatile Organic Concentrations in Groundwater
- Table 6 - Polynuclear Aromatic Concentrations in Groundwater
- Table 7 - Heavy Metal Concentrations in Groundwater
- Table 8 - Cyanide, Nitrate and Phosphorus Concentrations in Groundwater
- Table 9 - Summary of Groundwater Elevation Data

Illustrations:

- Plate 1 - Vicinity Map
- Plate 2 - Groundwater Surface Elevation Contours

Appendices:

- A - Pertinent Correspondence
- B - Well Sampling Forms and Purge Water Manifests
- C - Analytical Test Reports and Chain-of-Custody Records

Copies:

- Ms. Michele Heffes, Deputy Port Attorney
- Mr. Dale Klettke, Port of Oakland - Environmental Health and Safety Compliance Department
- Mr. Jonathan Redding, Fitzgerald, Abbott & Beardsley LLP.
- Mr. Leroy Griffin, City of Oakland Fire Department
- Mr. Rich Hiatt, Regional Water Quality Control Board
- Ms. Anne-Marie Collins, Zurich American Insurance Group
- Mr. James Tull, JSA Environmental

Table 1
Groundwater Monitoring Program
Ninth Avenue Terminal, Port of Oakland
September 1998 Through June 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mg (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Ek	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
MW-1		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-2		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-3		A									A			A	Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-4	A	A									A			A	Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-5	SA	SA									SA			SA	Q		Situated near monitoring wells MW-4 and MW-6; Concentrations are well documented and relatively stabilized;
MW-6	SA	SA									SA			SA	Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-7															Q		TEH concentrations are well documented and relatively stabilized; TVH & BTEX are non-detect for 8 sampling events
SCIMW-1		A									A			A	Q		Embarcadero perimeter well; Concentrations are well documented and relatively stabilized

Table 1
Groundwater Monitoring Program
Ninth Avenue Terminal, Port of Oakland
September 1998 Through June 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-2		Q		Q	Q			Q	Q	Q*	Q	Q	Q*	Q			Perimeter well; Monitor heavy metals for 1 year, if none at high concentrations- switch to monitoring for lead only; located downgradient of lead-impacted soils
SCIMW-3		A			A					A			A	Q			Concentrations are well documented and relatively stabilized
SCIMW-4		A								A			A	Q			Embarcadero perimeter well; TEH detected at relatively low concentrations
SCIMW-5		Q								Q			Q	Q			Shoreline perimeter well; Downgradient of TPH-impacted soil and groundwater
SCIMW-6		Q		Q	Q	Q		Q	Q	Q*	Q	Q	Q*	Q			Shoreline perimeter well; downgradient of diesel impacted former utility lines; down/cross-gradient of former fertilizer
SCIMW-7		A	SA			SA				SA			SA	Q			Known VOC impact; localized
SCIMW-8		A			A					A			A	Q			Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-9		A			A					A			A	Q			TEH detected in 2 (of 2) events
SCIMW-10		A								A			A	Q			TEH detected in 2 (of 2) events
SCIMW-11	Q	Q		Q	Q			Q		Q	Q*	Q	Q*	Q			Shoreline perimeter well; downgradient of Benzene/TPH-impacted soils; cross gradient of PNA-impacted soils
SCIMW-12		Q								Q	Q*	Q	Q*	Q			Shoreline perimeter well; Currently ND for TPH
SCIMW-13		A			A					A			A	Q			TEH detected in 2 (of 2) events
SCIMW-14		SA		A	A					Q	Q*	Q	Q*	Q			Bulkhead perimeter well; FP in adjacent boring SCI-2; TEH detected in 2 (of 2)
SCIMW-15		SA			A					SA			SA	Q			Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-16		A								A			A	Q			Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)

Table 1
Groundwater Monitoring Program
Ninth Avenue Terminal, Port of Oakland
September 1998 Through June 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-17		A									A			A	Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)
SCIMW-18		A									A			A	Q		TEH detected in 2 (of 2) events; Adjacent to storm drain
SCIMW-19		A									A			A	Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)
SCIMW-20		A							A		A			A	Q		Ninth Avenue perimeter well; Low concentrations of TEH detected in 2 (of 2) events; downgradient of lead-impacted soil and groundwater
SCIMW-21		A								A	A			A	Q		In area of caustic soil; TEH impacts
SCIMW-22		A	SA								SA			SA	Q		Located outside of VOC plume; currently ND for VOCs
SCIMW-23		Q				Q				Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; Located in former fertilizer plant area; Pesticides currently ND (except for 1 hit of 0.05 ppb Heptachlor B)
SCIMW-24	Q	Q			SA				Q	Q	Q*	Q	Q	Q*	Q		Adjacent to former cardlock tank; benzene/TPH-impacted groundwater
SCIMW-25															Q		Exterior location; No significant impact
SCIMW-26		A									A			A	Q		Located near 1992 diesel release area; low concentration of TEH detected in one event
SCIMW-27		A									A			A	Q		Adjacent to Cannery USTs; Relatively low TEH concentrations
SCIMW-28		A			A		A	SA			SA			SA	Q		Downgradient of Pb/PCB-impacted soil; downgradient of metals/PNA-impacted area
SCIMW-29															Q		Adjacent to former plating sumps; No apparent impact
SCIMW-30		A	SA								SA			SA	Q		Monitor lateral extent of VOC plume
SCIMW-31D			SA								SA			SA	Q		Monitor vertical extent of VOC plume; currently ND
SCIMW-32		A	SA								SA			SA	Q		Monitor lateral extent of VOC plume

Table 1
 Groundwater Monitoring Program
 Ninth Avenue Terminal, Port of Oakland
 September 1998 Through June 1999

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	VOCs (EPA 8260/8240 list)	PNAs (EPA 8270; Not Filtered)	PNAs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-33		A	SA		A	A					SA			SA	Q		Monitor lateral extent of VOC plume; Pesticides in soil; PNAs in nearby boring (RMA-22@7')
SCIMW-34	Q	Q		Q	Q				Q	Q	Q*	Q	Q	Q*	Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw
SCIMW-35		Q									Q			Q	Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw

Notes:

- Q = Quarterly - conducted each quarter (September 1998, December 1998, March 1999, June 1999)
- Q* = parameters measured in the field and by the analytical laboratory
- SA = Semi-Annually - conducted during the first and third quarterly events (September 1998, March 1999)
- A = Annually - conducted during the first quarter only (September 1998)
- TVH = Total Volatile Hydrocarbons
- BTEX = Benzene, Toluene, Ethylbenzene and total Xylenes
- TEH = Total Extractable Hydrocarbons
- VOCs = Volatile Organic Compounds
- SVOCs = Semi-Volatile Organic Compounds
- PCBs = Polychlorinated Biphenyls
- TDS = Total Dissolved Solids
- Obtain one duplicate VOC sample semi-annually for QA/QC

TABLE 2
 ECOLOGICAL PARAMETER RESULTS
 IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

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SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	pH field	pH laboratory	Eh field, before purge (mV)	Eh laboratory (mV)	TOTAL DISSOLVED SOLIDS (mg/L)	DISSOLVED ORGANIC CARBON (mg/L)	TOTAL ORGANIC CARBON (mg/L)	DISSOLVED OXYGEN field, before purge (mg/L)	DISSOLVED OXYGEN field, before sampling (mg/L)	DISSOLVED OXYGEN laboratory (mg/L)
MW-1	SCI	F	9/25/98	4.68	6.85	--	--	--	--	--	--	--	--	--
MW-2	SCI	F	9/23/98	5.29	6.74	--	-53	--	--	--	--	0.12	--	--
MW-3	SCI	F	9/29/98	5.83	7.51	--	--	--	--	--	--	--	--	--
MW-5	SCI	F	9/23/98	6.40	6.75	--	-71	--	--	--	--	0.11	--	--
SCIMW-1	SCI	E/H	9/22/98	5.02	6.99	--	-129	--	--	--	--	0.26	--	--
SCIMW-2	SCI	N	9/18/98	4.07	7.13	5.8	43	-31	12,600	4.4	--	0.11	1.5	1.2
SCIMW-3	SCI	I/J	9/18/98	4.29	6.81	--	-154	--	--	--	--	0.11	--	--
SCIMW-4	SCI	L	9/22/98	6.20	6.83	--	-127	--	--	--	--	0.23	--	--
SCIMW-5	SCI	M	9/17/98	5.78	6.75	--	--	--	--	--	--	--	--	--
SCIMW-6	SCI	C	9/23/98	4.38	7.02	6.2	270	223	24,800	--	<1.0	4.1	6.2	2.6
SCIMW-7	SCI	P/Q	9/17/98	5.74	6.78	--	-155	--	--	--	--	0.10	--	--
SCIMW-8	SCI	I	9/18/98	7.25	6.70	--	-146	--	--	--	--	0.15	--	--
SCIMW-9	SCI	I	9/21/98	6.64	6.67	--	-127	--	--	--	--	0.15	--	--
SCIMW-10	SCI	J	9/18/98	7.64	6.92	--	-257	--	--	--	--	0.08	--	--
SCIMW-11	SCI	N	9/23/98	4.72	7.01	6.5	-158	123	7,260	--	6.3	0.17	2.1	3.5
SCIMW-12	SCI	O	9/18/98	4.14	7.13	6.0	25	132	24,700	<1.0	--	4.19	3.7	5.0
SCIMW-13	SCI	J	9/18/98	7.42	6.78	--	-280	--	--	--	--	0.10	--	--
SCIMW-14	SCI	I/I	9/18/98	5.48	6.75	6.1	-116	140	3,190	23	--	0.18	1.4	2.7
SCIMW-15	SCI	I/I	9/21/98	5.17	6.79	--	-147	--	--	--	--	0.13	--	--
SCIMW-16	SCI	R	9/21/98	7.04	5.46	--	-160	--	--	--	--	0.11	--	--
SCIMW-17	SCI	R	9/21/98	6.94	5.13	--	-122	--	--	--	--	0.14	--	--
SCIMW-18	SCI	L	9/24/98	7.23	6.67	--	--	--	--	--	--	--	--	--
SCIMW-19	SCI	R	9/18/98	6.38	6.79	--	-138	--	--	--	--	0.14	--	--
SCIMW-20	SCI	H/Q	9/21/98	6.79	6.85	--	-86	--	--	--	--	0.16	--	--
SCIMW-21	SCI	D	5/6/97	7.44	--	6.9	--	--	--	--	--	--	--	--
SCIMW-21	SCI	D	9/22/98	7.54	6.91	6.9	228	--	--	--	--	0.18	--	--
SCIMW-22	SCI	P	5/6/97	8.22	--	6.8	--	--	--	--	--	--	--	--
SCIMW-22	SCI	P	9/22/98	7.24	6.58	--	-138	--	--	--	--	0.15	--	--
SCIMW-23	SCI	B	5/6/97	5.55	--	6.8	--	--	--	--	--	--	--	--

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TEH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
MW-1	Uribe	F	4/4/94	5.90	--	<50	510	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
203-MW-1	Uribe	F	10/3/94	4.36	--	--	390y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	4/10/95	5.05	--	<50	330	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	7/24/95	4.97	--	<50	230	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton	F	11/10/95	4.47	--	<50	430	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-1	Clayton/SCI	F	2/20/96	5.50	--	<50	590yh	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-1	SCI	F	5/24/96	4.95	--	<50	870yh	630y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	9/6/96	4.34	--	<50	850yh	490yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	12/5/96	5.19	--	<50	4,500yh	2,100yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-1	SCI	F	9/25/98	4.68	--	--	<47	<280	--	--	--	--	--	--	--	--	--	--
MW-2	Uribe	F	4/4/94	5.31	--	<50	1800	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
MW-2	Uribe	F	10/5/94	5.39	--	--	1,200y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	4/10/95	6.29	--	<50	550	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	7/24/95	5.91	--	70	960	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton	F	11/10/95	5.73	--	<50	920	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-2	Clayton/SCI	F	2/20/96	6.51	--	<50	1,700h	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-2	SCI	F	5/24/96	5.91	--	<50	2,800yh	1,200y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	9/5/96	6.34	--	58z	2,900	760yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	12/4/96	6.02	--	<50	1,600y	1,000yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-2	SCI	F	9/23/98	5.29	--	--	80yl	<300	--	--	--	--	--	--	--	--	--	--
MW-3	Uribe	F	4/4/94	5.95	--	<50	690	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--
203-MW-3	Uribe	F	10/4/94	4.74	--	--	480y	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	4/10/95	2.54	--	<50	830	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	7/24/95	6.56	--	<50	460	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-3	Clayton	F	11/10/95	5.07	--	<50	2,100	--	<0.4	<0.3	0.7	<0.4	--	--	--	--	--	--
MW-3	Clayton/SCI	F	2/20/96	6.04	--	<50	620h	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-3	SCI	F	5/24/96	5.69	--	<50	1,100yh	550y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Dam (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TBH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
MW-3	SCI	F	9/18/96	3.76	--	<50	1,500	890yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-3	SCI	F	12/13/96	5.34	--	<50	580	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-3	SCI	F	9/29/98	5.83	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
MW-4	Uribe	F	4/4/94	7.78	--	6,200	410,000	--	140	47	20	310	--	--	--	--	--	--
MW-4	Clayton	F	7/24/95	8.33	--	2,400	21,000	--	140	34	74	40	--	--	--	--	--	--
MW-4	SCI	F	5/24/96	9.02	--	690y	37,000	2,800yl	44	18	<2.5	7.7	--	--	--	--	--	--
MW-4	SCI	F	9/4/96	7.33	--	1,000h	240,000	26,000yl	100	5.2	<0.5	7.2	--	--	--	--	--	--
MW-4	SCI	F	12/3/96	8.76	--	1,500yh	13,000	2,000yl	120	33	0.9	22	--	--	--	--	--	--
MW-5	Clayton	F	4/10/95	7.20	--	1,100	6,200	--	3.1	2.9	<0.3	11.3	--	--	--	--	--	--
MW-5	Clayton	F	7/24/95	6.60	--	720	4,800	--	3.1	0.6	0.7	0.7	--	--	--	--	--	--
MW-5	Clayton	F	11/10/95	6.46	--	260	3,700	--	0.8	0.6	0.5	1.9	--	--	--	--	--	--
MW-5	Clayton/SCI	F	2/20/96	9.15	--	150y	440h	--	0.5	<0.5	<0.5	<1	--	--	--	--	--	--
MW-5	SCI	F	5/24/96	9.17	--	82y	4,600yh	1,900y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F	9/4/96	6.40	--	<50	7,700yh	1,900yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F	12/3/96	7.20	--	140yh	13,000	1,900yl	1.5	<0.5	<0.5	2.6	--	--	--	--	--	--
MW-5	SCI	F	1/20/97	8.38	--	<50	9,400	1,500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F/H	5/6/97	6.45	<5,000	<50	8,800	2,500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-5	SCI	F/H	9/23/98	6.40	--	<50	170 l	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-6	Clayton	F	4/10/95	7.74	--	1,300	10,000	--	4.4	0.7	<0.3	0.8	--	--	--	--	--	--
MW-6	SCI	F	5/24/96	7.71	--	280,000yh	240,000	5,500yl	<250	<250	<250	<250	--	--	--	--	--	--
MW-6	SCI	F	9/5/96	6.67	89,000	200h	50,000	3,200yl	5.3	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
MW-6	SCI	F	12/4/96	7.90	--	4,700yh	140,000	7,300yl	19	<10	11	<10	--	--	--	--	--	--
MW-6	SCI	F/H	5/6/97	7.04	330,000	440yh	620,000	24,000yl	2.4	<0.5	0.51	0.61	--	--	--	--	--	--
MW-7	Clayton	M	4/10/95	5.72	--	<50	370	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	M	7/24/95	6.41	--	<50	260	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton	M	11/10/95	5.35	--	<50	270	--	<0.4	<0.3	<0.3	<0.4	--	--	--	--	--	--
MW-7	Clayton/SCI	M	2/20/96	6.00	--	<50	6,100	--	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TEH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
MW-7	SCI	M	5/24/96	5.44	--	<50	750yh	750y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	SCI	M	9/5/96	5.48	<5,000	<50	480yh	310yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
MW-7	SCI	M	12/4/96	5.25	--	<50	340y	<240	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
MW-7	SCI	M	1/17/97	6.48	--	<50	200	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-1	SCI	E/H	5/24/96	5.09	<5,000	<50	560yh	280y	<5.0	<5.0	<5.0	<5.0	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-1	SCI	E/H	9/6/96	4.39	<5,000	<50	870yh	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-1	SCI	E/H	1/22/97	5.29	--	<50	520yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-1	SCI	E/H	9/22/98	5.02	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	N	5/23/96	4.04	5,600	--	2,600 l	360yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-2	SCI	N	9/4/96	3.38	8,000	<50	5,100	770yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-2	SCI	N	1/17/97	3.82	--	95y	13,000 l	2,400yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-2	SCI	N	9/18/98	4.07	--	--	31,000h	5,400yl	--	--	--	--	--	--	--	--	--	--
SCIMW-3	SCI	I/J	5/23/96	7.22	<5,000	--	8,000yh	7,400y	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-3	SCI	I/J	9/5/96	6.67	<5,000	<50	8,800yh	4,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
XB Dup of SCIMW-3	SCI	I/J	9/5/96	6.67	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-3	SCI	I/J	1/20/97	6.46	--	<50	7,500yh	5,200y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-3	SCI	I/J	9/18/98	4.29	--	--	75yh	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-4	SCI	L	8/26/96	5.50	<5,000	<50	630yh	670yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-4	SCI	L	1/22/97	8.43	--	<50	530yh	990yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-4	SCI	L	9/23/98	6.20	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-5	SCI	M	9/3/96	4.63	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-5	SCI	M	1/20/97	6.12	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-5	SCI	M	9/23/98	5.78	--	--	70y	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-6	SCI	C	8/28/96	4.69	<5,000	<50	150yh	260yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-6	SCI	C	1/22/97	4.68	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-6	SCI	C	9/23/98	4.38	--	--	<50	<300	--	--	--	--	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-7	SCI	P/Q	9/6/96	3.31+	<5,000	540	6,100y	1,900yl	5,300	<1,300	<1,300	<1,300	--	--	--	--	<1.0	ND

TABLE 2
 ECOLOGICAL PARAMETER RESULTS
 IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FBET)	pH field	pH laboratory	Eh field, before purge (mV)	Eh laboratory (mV)	TOTAL DISSOLVED SOLIDS (mg/L)	DISSOLVED ORGANIC CARBON (mg/L)	TOTAL ORGANIC CARBON (mg/L)	DISSOLVED OXYGEN field, before purge (mg/L)	DISSOLVED OXYGEN field, before sampling (mg/L)	DISSOLVED OXYGEN laboratory (mg/L)
SCIMW-23	SCI	B	9/24/98	5.46	6.83	6.1	--	-50	9,940	8.3	--	--	0.4	1.2
SCIMW-24	SCI	N	9/18/98	4.96	6.38	6.3	-158	-52	1,850	29	--	0.13	1.0	1.9
SCIMW-26	SCI	H	9/22/98	7.41	6.54	--	-94	--	--	--	--	0.11	--	--
SCIMW-27	SCI	E/H	9/22/98	6.58	6.85	--	-52	--	--	--	--	0.11	--	--
SCIMW-28	SCI	Q	9/23/98	7.83	6.85	--	--	--	--	--	--	--	--	--
SCIMW-30	SCI	P	9/21/98	7.63	6.58	--	-132	--	--	--	--	0.12	--	--
SCIMW-31D	SCI	P	9/21/98	4.34	5.07	--	-20	--	--	--	--	0.18	--	--
SCIMW-32	SCI	I/P	9/21/98	7.71	5.11	--	-101	--	--	--	--	0.09	--	--
SCIMW-33	SCI	I/J	9/21/98	7.15	4.98	--	-194	--	--	--	--	0.09	--	--
SCIMW-34	SCI	R	9/24/98	4.87	6.87	6.3	--	-15	15,000	12	--	--	1.4	3.3
SCIMW-35	SCI	R	9/23/98	4.74	6.76	--	125	--	--	--	--	3.06	--	--

Notes:

Eh = Redox potential or oxidizing-reduction potential

mV = millivolts

mg/L = milligrams per Liter

Groundwater elevation measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TEH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
SCIMW-7	SCI	P/Q	1/20/97	7.32	--	6,900z	11,000y	7,500yl	8,600	<25	7,200	103	--	--	--	--	--	--
SCIMW-7	SCI	P/Q	10/20/97	6.96	<5,000	9,100yl	6,100yh	2,500yl	5,100	15	3,800	134	0.78	0.32	<0.094	**	<0.47	ND
SCIMW-7	SCI	P/Q	9/22/98	5.74	--	--	<50	<300	1,100	<250	480	<250	<0.1	<0.1	<0.1	ND	<0.5	ND
SCIMW-8	SCI	I	8/26/96	7.11	<5,000	<50	1,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-8	SCI	I	1/21/97	7.70	--	<50	860yh	830yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-8	SCI	I	9/18/98	7.25	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-9	SCI	I	8/26/96	6.40	5,000	<50	1,800yh	1,100yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-9	SCI	I	1/23/97	6.66	--	<50	1,900yh	2,300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-9	SCI	I	9/22/98	6.64	--	--	95yh	600yh	--	--	--	--	--	--	--	--	--	--
SCIMW-10	SCI	J	8/26/96	7.95	<5,000	<50	1,100yh	1,200yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-10	SCI	J	1/23/97	7.87	--	<50	1,400yh	2,500	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--
SCIMW-10	SCI	J	9/18/98	7.64	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-11	SCI	N	8/28/96	3.83	<5,000	<50	400yhl	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-11	SCI	N	1/17/97	4.32	--	<50	180	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-11	SCI	N	9/23/98	4.72	--	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-12	SCI	O	8/29/96	4.09	<5,000	<50	<50	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-12	SCI	O	1/17/97	4.53	--	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-12	SCI	O	9/18/98	4.14	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-13	SCI	J	8/29/96	7.21	<5,000	<50	5,400yh	2,100yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-13	SCI	J	1/23/97	6.93	--	<50	3,400yh	3,900	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-13	SCI	J	9/18/98	7.42	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-14	SCI	I/J	8/29/96	5.36	6,000	<50	2,200yh	1,400yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-14	SCI	I/J	1/21/97	5.64	--	<50	570yh	420yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-14	SCI	I/J	9/18/98	5.48	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-15	SCI	I/J	8/29/96	4.85	<5,000	<50	2,100yh	1,600yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-15	SCI	I/J	1/17/97	5.01	--	<50	2,500h	1,600yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-15	SCI	I/J	9/21/98	5.17	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	OIL & GREASE (ug/L)	TVH as GAS (ug/L)	TEH as DIESEL (ug/L)	TEH as MOTOR OIL (ug/L)	BENZENE (ug/L)	ETHYL-BENZENE (ug/L)	TOLUENE (ug/L)	TOTAL XYLENES (ug/L)	4,4'-DDD (ug/L)	4,4'-DDE (ug/L)	4,4'-DDT (ug/L)	OTHER HERBS/ PESTS (ug/L)	AROCLOR-1260 (ug/L)	OTHER PCBs (ug/L)
SCIMW-16	SCI	R	8/30/96	6.81	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
XA Dup of SCIMW-16	SCI	R	8/30/96	6.81	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-16	SCI	R	1/22/97	7.03	--	<50	290yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-16	SCI	R	9/22/98	7.04	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-17	SCI	R	8/29/96	6.55	<5,000	<50	190yh	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-17	SCI	R	1/22/97	7.67	--	<50	330yh	500yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-17	SCI	R	9/21/98	6.94	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-18	SCI	L	9/6/96	5.22+	<5,000	<50	2,200yh	1,600yl	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-18	SCI	L	1/20/97	6.98	--	<50	1,900yh	1,900y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-18	SCI	L	9/24/98	7.23	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-19	SCI	R	8/30/96	6.16	<5,000	<50	180	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-19	SCI	R	1/21/97	7.42	--	<50	150yh	<250	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-19	SCI	R	9/18/98	6.38	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-20	SCI	H/Q	9/3/96	7.03	<5,000	<50	330y	<250	<5.0	<5.0	<5.0	<5.0	--	--	--	--	<1.0	ND
SCIMW-20	SCI	H/Q	1/20/97	7.67	--	<50	340yh	290y	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-20	SCI	H/Q	9/22/98	6.79	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-21	SCI	D	5/6/97	7.44	<5,000	<50	670h	860yh	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-21	SCI	D	9/23/98	7.54	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-22	SCI	P	5/6/97	8.22	<5,000	<50	1,400yh	2,300hl	<0.5	<0.5	<0.5	<0.5	0.12	<0.094	<0.094	ND	<0.47	ND
SCIMW-22	SCI	P	10/20/97	7.61	<5,000	<50	1,500yh	2,700yh	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-22	SCI	P	9/22/98	7.24	--	--	<50	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-23	SCI	B	5/6/97	5.55	10,000	--	1,400	1,200yl	--	--	--	--	<0.094	<0.094	<0.094	***	<0.47	ND
SCIMW-23	SCI	B	9/24/98	5.46	--	--	680y	<300	--	--	--	--	<0.09	<0.09	<0.09	ND	<0.5	ND
SCIMW-24	SCI	N	5/6/97	4.44	<5,000	5,000	2,700 l	2,100 l	720	220	37	120	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-24	SCI	N	9/18/98	4.96	--	7,100	330yl	<300	950	99	53	98	--	--	--	--	--	--
SCIMW-25	SCI	H	5/7/97	7.30	<5,000	<50	100	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-26	SCI	H	5/6/97	8.15	<5,000	<50	140	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--

TABLE 3
 PETROLEUM HYDROCARBON, BTEX, PESTICIDE AND PCB
 CONCENTRATIONS IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	OIL & GREASE (µg/L)	TVH as GAS (µg/L)	TEH as DIESEL (µg/L)	TEH as MOTOR OIL (µg/L)	BENZENE (µg/L)	ETHYL-BENZENE (µg/L)	TOLUENE (µg/L)	TOTAL XYLENES (µg/L)	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	OTHER HERBS/ PESTS (µg/L)	AROCLOR-1260 (µg/L)	OTHER PCBs (µg/L)
SCIMW-26	SCI	H	9/22/98	7.41	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-27	SCI	E/H	5/6/97	6.45	<5,000	<50	3,400	1,800yl	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-27	SCI	E/H	9/22/98	6.58	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Q	5/7/97	8.34	<5,000	<50	180	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-28	SCI	Q	9/25/98	7.83	--	--	<47	<280	--	--	--	--	--	--	--	--	<0.47	ND
SCIMW-29	SCI	H	5/20/97	7.48	<5,000	<50	150	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-30	SCI	P	10/20/97	7.53	<5,000	<50	530yh	830yhl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-30	SCI	P	9/23/98	7.63	--	--	60y	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-31D	SCI	P	10/20/97	4.23	<5,000	<50	170y	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-31D	SCI	P	9/21/98	4.34	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-32	SCI	I/P	10/20/97	7.73	<5,000	<50	1,000yh	990yl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-32	SCI	I/P	9/21/98	7.71	--	--	<50	<300	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--
SCIMW-33	SCI	I/J	10/20/97	6.89	<5,000	780	5,700yh	1,600yhl	3.2	12	<0.5	30.7	1.8	0.3	0.11	ND	<0.47	ND
SCIMW-33	SCI	I/J	9/21/98	7.15	--	--	210yl	<300	<10	<10	<10	<10	2.0	0.2	<0.09	ND	<0.5	ND
SCIMW-34	SCI	R	10/20/97	4.88	<5,000	<50	5,200yh	3,600yhl	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-34	SCI	R	9/24/98	4.87	--	92	61y	<300	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
SCIMW-35	SCI	R	10/20/97	4.87	<5,000	<50	99yh	<300	<0.5	<0.5	<0.5	<0.5	<0.094	<0.094	<0.094	ND	<0.47	ND
SCIMW-35	SCI	R	9/23/98	4.74	--	--	<50	<300	--	--	--	--	--	--	--	--	--	--

TVH = Total Volatile Hydrocarbons
 TEH = Total Extractable Hydrocarbons
 DDD = Dichlorodiphenyldichloroethane
 DDE = Dichlorodiphenyldichloroethene
 DDT = Dichlorodiphenyltrichloroethene
 PCBs = Polychlorinated Biphenyls
 *** = Also detected 0.05µg/L Heptachlor epoxide B

µg/L = micrograms per liter or parts per billion
 y = Sample exhibits fuel pattern which does not resemble std
 h = heavier hydrocarbons than indicated standard
 l = lighter hydrocarbons than indicated standard
 z = Sample exhibits unknown single peak or peaks
 J = estimated value

-- = Not tested
 <50 = Comp. not detected at or above stated reporting limit
 ND = Not detected
 + = Groundwater level may not be stabilized
 Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 4
VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	ACETONE (ug/L)	MEK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
MW-5	SCI	F	1/20/97	8.38	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-5	SCI	F/H	5/6/97	6.45	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-6	SCI	F	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-6	SCI	F/H	5/6/97	7.04	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-7	SCI	M	9/5/96	5.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
MW-7	SCI	M	1/17/97	6.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	5/24/96	5.09	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	9/6/96	4.39	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-1	SCI	E/H	1/22/97	5.29	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-2	SCI	N	9/4/96	3.38	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-2	SCI	N	1/17/97	3.82	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	5/23/96	7.22	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
XB Dup of SCIMW-3	SCI	I/J	9/5/96	6.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-3	SCI	I/J	1/20/97	6.46	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-4	SCI	L	8/26/96	5.50	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-4	SCI	L	1/22/97	8.43	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-5	SCI	M	9/3/96	4.63	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-5	SCI	M	1/20/97	6.12	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-6	SCI	C	8/28/96	4.69	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-6	SCI	C	1/22/97	4.68	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-7	SCI	P/Q	9/6/96	3.31+	<5,000	<2,500	<1,300	<1,300	2,400J	8,100	<1,300	<1,300	27,000	<1,300	<2,500	10,000	7,900	8,900	ND
SCIMW-7	SCI	P/Q	1/20/97	7.32	<13,000	<6,300	<3,100	<3,100	6,300	13,000	<3,100	<3,100	91,000	<3,100	<6,300	53,000	32,000	5,600J	ND
SCIMW-7	SCI	P/Q	10/20/97	6.96	<1,000	250J	<250	<250	4,000	6,800	<250	330	60,000	920	<500	12,000	2,900	7,400	ND
SCIMW-7	SCI	P/Q	9/22/98	5.74	<1,000	<500	<250	<250	1,400	1,700	<250	<250	5,000	180J	<500	1,600	<250	2,400	ND
SCIMW-8	SCI	I	8/26/96	7.11	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-8	SCI	I	1/21/97	7.70	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-9	SCI	I	8/29/96	6.40	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-9	SCI	I	1/23/97	6.66	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

TABLE 4
VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	ACETONE (ug/L)	MEK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
SCIMW-10	SCI	J	8/26/96	7.95	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-10	SCI	J	1/23/97	7.87	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-11	SCI	N	8/28/96	3.83	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-11	SCI	N	1/17/97	4.32	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-12	SCI	O	8/29/96	4.09	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-12	SCI	O	1/17/97	4.53	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-13	SCI	J	8/29/96	7.21	<20	<10	<5.0	<5.0	<10	6.7	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-13	SCI	J	1/23/97	6.93	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-14	SCI	I/J	8/29/96	5.36	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-14	SCI	I/J	1/21/97	5.64	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-15	SCI	I/J	8/29/96	4.85	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-15	SCI	I/J	1/17/97	5.01	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-16	SCI	R	8/30/96	6.81	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
XA Dup of SCIMW-16	SCI	R	8/30/96	6.81	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-16	SCI	R	1/22/97	7.03	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-17	SCI	R	8/29/96	6.55	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-17	SCI	R	1/22/97	7.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-18	SCI	L	9/6/96	5.22+	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-18	SCI	L	1/20/97	6.98	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-19	SCI	R	8/30/96	6.16	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-19	SCI	R	1/21/97	7.42	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-20	SCI	H/Q	9/3/96	7.03	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-20	SCI	H/Q	1/20/97	7.67	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-22	SCI	P	5/6/97	8.22	<100	<50	<25	<25	<50	<25	<25	<25	<25	<25	<50	<25	<25	<50	ND
SCIMW-22	SCI	P	10/20/97	7.61	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-22	SCI	P	9/23/98	7.24	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-24	SCI	N	5/6/97	4.44	<100	<50	<25	<25	<50	<25	<25	<25	<25	<25	<50	<25	<25	<50	ND
SCIMW-25	SCI	H	5/7/97	7.30	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	3.5J	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-26	SCI	H	5/6/97	8.15	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

perhaps can
determine
8240 on many
wells.

TABLE 4
VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FBET)	ACETONE (ug/L)	MEK or 2-BUTAN-ONE (ug/L)	CARBON DISULFIDE (ug/L)	CHLORO-BENZENE (ug/L)	CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHANE (ug/L)	1,2-DI-CHLORO-ETHANE (ug/L)	1,1-DI-CHLORO-ETHENE (ug/L)	cis-1,2-DI-CHLORO-ETHENE (ug/L)	trans-1,2-DI-CHLORO-ETHENE (ug/L)	4-METHYL-2-PENTAN-ONE (ug/L)	1,1,1-TRI-CHLORO-ETHANE (ug/L)	TRI-CHLORO-ETHENE (ug/L)	VINYL CHLORIDE (ug/L)	OTHER 8240s EXCL. BTEX*
SCIMW-27	SCI	E/H	5/6/97	6.45	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-29	SCI	H	5/20/97	7.48	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-30	SCI	P	10/20/97	7.53	27	5.7J	25	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-30	SCI	P	9/23/98	7.63	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-31D	SCI	P	10/20/97	4.23	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-31D	SCI	P	9/21/98	4.34	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-32	SCI	I/P	10/20/97	7.73	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-32	SCI	I/P	9/21/98	7.71	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-33	SCI	I/J	10/20/97	6.89	<50	<25	<13	310	<25	<13	<13	<13	<13	<13	<25	<13	<13	<25	ND
SCIMW-33	SCI	I/J	9/21/98	7.15	<40	<20	<10	260	<20	<10	<10	<10	<10	<10	<20	<10	<10	<20	ND
SCIMW-34	SCI	R	10/20/97	4.88	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND
SCIMW-35	SCI	R	10/20/97	4.87	<20	<10	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<10	ND

* = BTEX presented in Table 5
MEK = Methyl ethyl ketone
ug/L = micrograms per liter or parts per billion
<10 = Compound not detected at or above stated reporting limit

ND = Not detected
J = Estimated value
+ = Groundwater level may not be stabilized
Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 5
SEMI-VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	BENZOIC ACID (ug/L)	BENZYL ALCOHOL (ug/L)	1,2-DI-CHLORO-BENZENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	2,4-DI-METHYL-PHENOL (ug/L)	DI-N-OCTYL-PHTHALATE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	2-METHYL-PHENOL (ug/L)	4-METHYL-PHENOL (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENOL (ug/L)	OTHER 8270s
MW-5	SCI	Filtered	F	1/20/97	8.38	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
MW-6	SCI	Filtered	F	9/5/96	6.67	<2400	<470	<470	<470	<470	<470	<470	<470	<470	<470	<470	ND
MW-7	SCI	Filtered	M	9/5/96	5.48	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
MW-7	SCI	Filtered	M	1/17/97	6.48	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-1	SCI	Filtered	E/H	5/24/96	5.09	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-1	SCI	Filtered	E/H	9/6/96	4.39	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-1	SCI	Filtered	E/H	1/22/97	5.29	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-2	SCI	Filtered	N	5/23/96	4.04	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-2	SCI	Filtered	N	9/4/96	3.38	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-2	SCI	Filtered	N	1/17/97	3.82	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-2	SCI	Unfiltered	N	9/18/98	4.07	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-2	SCI	Filtered	N	9/18/98	4.07	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-3	SCI	Filtered	I/J	5/23/96	7.22	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-3	SCI	Filtered	I/J	9/5/96	6.67	<47	<9.4	<9.4	<9.4	<9.4	5.5J	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-3	SCI	Filtered	I/J	1/20/97	6.46	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-3	SCI	Filtered	I/J	9/18/98	4.29	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-4	SCI	Filtered	L	8/26/96	5.50	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-4	SCI	Filtered	L	1/22/97	8.43	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-5	SCI	Filtered	M	9/3/96	4.63	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-5	SCI	Filtered	M	1/20/97	6.12	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-6	SCI	Filtered	C	8/28/96	4.69	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-6	SCI	Filtered	C	1/22/97	4.68	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-6	SCI	Unfiltered	C	9/23/98	4.38	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-6	SCI	Filtered	C	9/23/98	4.38	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-7	SCI	Filtered	P/Q	9/6/96	3.31+	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	4.7J	<9.4	<9.4	ND
SCIMW-7	SCI	Filtered	P/Q	1/20/97	7.32	280	11J	<19	<19	40	<19	<19	55	110	<19	27	ND
SCIMW-8	SCI	Filtered	I	8/26/96	7.11	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-8	SCI	Filtered	I	1/21/97	7.70	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-8	SCI	Filtered	I	9/18/98	7.25	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 5
SEMI-VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	BENZOIC ACID (ug/L)	BENZYL ALCOHOL (ug/L)	1,2-DI-CHLORO-BENZENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	2,4-DI-METHYL-PHENOL (ug/L)	DI-N-OCTYL-PHTHALATE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	2-METHYL-PHENOL (ug/L)	4-METHYL-PHENOL (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENOL (ug/L)	OTHER 8270s
SCIMW-9	SCI	Filtered	I	8/29/96	6.40	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-9	SCI	Filtered	I	1/23/97	6.66	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-9	SCI	Filtered	I	9/22/98	6.64	<48	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	NL	<9.7	<9.7	ND
SCIMW-10	SCI	Filtered	J	8/26/96	7.95	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-10	SCI	Filtered	J	1/23/97	7.87	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-11	SCI	Filtered	N	8/28/96	3.83	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-11	SCI	Filtered	N	1/17/97	4.32	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-11	SCI	Unfiltered	N	9/23/98	4.72	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-11	SCI	Filtered	N	9/23/98	4.72	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-12	SCI	Filtered	O	8/29/96	4.09	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-12	SCI	Filtered	O	1/17/97	4.53	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-13	SCI	Filtered	J	8/29/96	7.21	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-13	SCI	Filtered	J	1/23/97	6.93	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-13	SCI	Filtered	J	9/18/98	7.42	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-14	SCI	Filtered	I/J	8/29/96	5.36	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-14	SCI	Filtered	I/J	1/21/97	5.64	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-14	SCI	Unfiltered	I/J	9/18/98	5.48	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-14	SCI	Filtered	I/J	9/18/98	5.48	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-15	SCI	Filtered	I/J	8/29/96	4.85	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-15	SCI	Filtered	I/J	1/17/97	5.01	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-15	SCI	Filtered	I/J	9/21/98	5.17	<48	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	<9.5	NL	<9.5	<9.5	ND
SCIMW-16	SCI	Filtered	R	8/30/96	6.81	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-16	SCI	Filtered	R	1/22/97	7.03	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-17	SCI	Filtered	R	8/29/96	6.55	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-17	SCI	Filtered	R	1/22/97	7.67	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-18	SCI	Filtered	L	9/6/96	5.22+	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-18	SCI	Filtered	L	1/20/97	6.98	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-19	SCI	Filtered	R	8/30/96	6.16	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-19	SCI	Filtered	R	1/21/97	7.42	<47	<9.4	<9.4	<9.4	<9.4	<9.4	11	<9.4	<9.4	<9.4	<9.4	ND

TABLE 5
SEMI-VOLATILE ORGANIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	BENZOIC ACID (ug/L)	BENZYL ALCOHOL (ug/L)	1,2-DI-CHLORO-BENZENE (ug/L)	1,4-DI-CHLORO-BENZENE (ug/L)	2,4-DI-METHYL-PHENOL (ug/L)	DI-N-OCTYL-PHTHALATE (ug/L)	BIS(2-ETHYL-HEXYL) PHTHALATE (ug/L)	2-METHYL-PHENOL (ug/L)	4-METHYL-PHENOL (ug/L)	PENTA-CHLORO-PHENOL (ug/L)	PHENOL (ug/L)	OTHER 8270s
SCIMW-20	SCI	Filtered	H/Q	9/3/96	7.03	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-20	SCI	Filtered	H/Q	1/20/97	7.67	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-22	SCI	Filtered	P	5/6/97	8.22	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-24	SCI	Filtered	N	5/6/97	4.44	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	14	ND
SCIMW-24	SCI	Filtered	N	9/18/98	4.96	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Filtered	Q	9/25/98	7.83	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-33	SCI	Filtered	I/J	10/6/98	7.15	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-34	SCI	Filtered	R	10/20/97	4.88	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SCIMW-34	SCI	Unfiltered	R	9/24/98	4.87	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-34	SCI	Filtered	R	9/24/98	4.87	--	--	--	--	--	--	--	--	--	--	--	--
SCIMW-35	SCI		R	10/20/97	4.87	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	ND

µg/L = micrograms per liter or parts per billion
<25 = Compound not detected at or above stated reporting limit
NL = Not listed on analytical test report

ND = Not detected
+ = Groundwater level may not be stabilized
-- = Not tested

J = Estimated value
e = Sample extracted 3 days after prescribed holding time

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 6
POLYNUCLEAR AROMATIC CONCENTRATIONS
IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (FEET)	Acenaphthene (µg/L)		Acenaphthylene (µg/L)		Anthracene (µg/L)		Benzo(a) Anthracene (µg/L)		Chrysene (µg/L)		Benzo(b, k) Fluoranthene (µg/L)		Benzo(g,h,i) Perylene (µg/L)		Benzo(a) Pyrene (µg/L)		Indeno (1,2,3-cd) pyrene (µg/L)		Dibenz(a,h) Anthracene (µg/L)		Fluoranthene (µg/L)		Fluorene (µg/L)		Naphthalene (µg/L)		Phenanthrene (µg/L)		Pyrene (µg/L)		Other PNAs (µg/L)									
					Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered						
SCIMW-15	SCI	U	9/21/98	5.17	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	ND	--			
SCIMW-16	SCI	R	8/30/96	6.81	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-16	SCI	R	1/22/97	7.03	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-17	SCI	R	8/29/96	6.55	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-17	SCI	R	1/22/97	7.67	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-18	SCI	L	9/8/96	5.22+	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-18	SCI	L	1/20/97	6.93	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-19	SCI	R	8/30/96	6.16	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-19	SCI	R	1/21/97	7.42	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-20	SCI	HQ	9/8/96	7.03	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-20	SCI	HQ	1/20/97	7.67	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-22	SCI	P	5/6/97	8.22	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-24	SCI	N	5/6/97	4.44	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--		
SCIMW-24	SCI	N	9/18/98	4.96	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	<9.7	--	ND	--	
SCIMW-28	SCI	Q	9/25/98	7.83	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	<9.5	--	ND	--	
SCIMW-33	SCI	U	10/6/98	7.15	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	<9.6	--	ND	--	
SCIMW-34	SCI	R	10/20/97	4.88	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--
SCIMW-34	SCI	R	9/24/98	4.87	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ND	--		
SCIMW-35	SCI	R	10/20/97	4.87	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	<9.4	--	ND	--

Notes:

U = 2-Methylnaphthalene detected at 410J µg/L in MW-6

R = 2-Methylnaphthalene detected at 6.0J µg/L in SCIMW-2

HQ = 2-Methylnaphthalene detected at 24 µg/L in SCIMW-24

L = micrograms per Liter or parts per billion

-- = Not tested

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the data sampled.

TABLE 7
HEAVY METAL CONCENTRATIONS IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (feet)	ANTIMONY (ug/L)	ARSENIC (ug/L)	BARIUM (ug/L)	BERYLLIUM (ug/L)	CADMIUM (ug/L)	TOTAL CHROMIUM (ug/L)	CHROMIUM VI (ug/L)	COBALT (ug/L)	COPPER (ug/L)	LEAD (ug/L)	MERCURY (ug/L)	MOLYB-DENUM (ug/L)	NICKEL (ug/L)	POTAS-SIUM (ug/L)	SELE-NIUM (ug/L)	SILVER (ug/L)	THAL-LIUM (ug/L)	VANA-DIUM (ug/L)	ZINC (ug/L)
MW-5	SCI	Filtered	F	1/20/97	8.38	<60	10	49	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	6.5	<5.0	<5.0	<10	26
MW-5	SCI	Filtered	F/H	5/6/97	6.45	--	--	--	--	--	--	50	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	SCI	Filtered	F	9/5/96	6.67	<60	8.9	420	<2.0	<2.0	<10	--	<20	<10	3.5	<0.20	<20	<20	--	27	<5.0	<5.0	<10	<20
MW-6	SCI	Filtered	F/H	5/6/97	7.04	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	SCI	Filtered	M	9/5/96	5.48	<60	10	78	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	20	<5.0	<5.0	<10	<20
MW-7	SCI	Filtered	M	1/17/97	6.48	<60	12	44	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	23	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Unfiltered	E/H	5/24/96	5.09	<60	45	1,000	2.8	2.3	63	--	<20	1,800	2,300	<0.20	<20	68	--	7.8	<5.0	<5.0	62	1,000
SCIMW-1	SCI	Filtered	E/H	5/24/96	5.09	<60	<5.0	170	2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	8.3	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Filtered	E/H	9/6/96	4.39	<60	<5.0	150	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	17	<5.0	<5.0	<10	<20
SCIMW-1	SCI	Filtered	E/H	1/22/97	5.29	<60	<5.0	170	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	7.7	<5.0	<5.0	<10	210
SCIMW-2	SCI	Unfiltered	N	5/23/96	4.04	<60	14	90	<2.0	<2.0	12	--	<20	<10	2,300	0.64	<20	<20	--	14	<5.0	<5.0	<10	38
SCIMW-2	SCI	Filtered	N	5/23/96	4.04	<60	11	490	<2.0	<2.0	<10	--	<20	69	62	<0.20	<20	<20	--	22	<5.0	<5.0	<10	110
SCIMW-2	SCI	Filtered	N	9/4/96	3.38	<60	15	320	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Filtered	N	1/17/97	3.82	<60	6.6	340	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-2	SCI	Filtered	N	9/18/98	4.07	<60	5.0	430	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	10	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Unfiltered	I/J	5/23/96	7.22	<60	<5.0	<10	<2.0	<2.0	<10	--	58	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	5/23/96	7.22	<60	<5.0	42	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	8.2	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	9/5/96	6.67	<60	8.5	170	<2.0	<2.0	<10	--	<20	<10	4.6	<0.20	<20	<20	--	31	<5.0	<5.0	<10	<20
SCIMW-3	SCI	Filtered	I/J	1/20/97	6.46	<60	23	110	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	31	<5.0	<5.0	<10	<20
SCIMW-4	SCI	Filtered	L	8/26/96	5.50	<60	12	37	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	22	<5.0	<5.0	<10	<20
SCIMW-4	SCI	Filtered	L	1/22/97	8.43	<60	6.6	16	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	25	<5.0	<5.0	<10	<20
SCIMW-5	SCI	Filtered	M	9/3/96	4.63	<60	<5.0	290	2.0	2.0	<10	--	<20	<10	<3.0	0.23	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-5	SCI	Filtered	M	1/20/97	6.12	<60	<5.0	62	2.7	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	25
SCIMW-6	SCI	Filtered	C	8/28/96	4.69	<60	<5.0	100	2.1	<2.0	<10	--	<20	59	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	240
SCIMW-6	SCI	Filtered	C	1/22/97	4.68	<60	<5.0	30	<2.0	<2.0	<10	--	<20	20	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	72
SCIMW-6	SCI	Filtered	C	9/23/98	4.38	<60	<5.0	73	2.5	<5.0	<10	--	<20	290	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	80
SCIMW-7	SCI	Filtered	P/Q	9/6/96	3.31+	<60	24	290	<2.0	<2.0	<10	--	<20	13	<3.0	0.52	<20	29	--	18	<5.0	<5.0	12	<20
SCIMW-7	SCI	Filtered	P/Q	1/20/97	7.32	<60	19	430	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	83	--	18	<5.0	<5.0	<10	<20
SCIMW-8	SCI	Filtered	I	8/26/96	7.11	<60	8.9	72	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	23	--	43	<5.0	<5.0	<10	21

TABLE 7
HEAVY METAL CONCENTRATIONS IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (feet)	ANTIMONY (µg/L)	ARSENIC (µg/L)	BARIUM (µg/L)	BERYLLIUM (µg/L)	CADMIUM (µg/L)	TOTAL CHROMIUM (µg/L)	CHROMIUM VI (µg/L)	COBALT (µg/L)	COPPER (µg/L)	LEAD (µg/L)	MERCURY (µg/L)	MOLYBDENUM (µg/L)	NICKEL (µg/L)	POTASSIUM (µg/L)	SELENIUM (µg/L)	SILVER (µg/L)	THALLIUM (µg/L)	VANADIUM (µg/L)	ZINC (µg/L)
SCIMW-8	SCI	Filtered	I	1/21/97	7.70	<60	23	57	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	10	<5.0	<5.0	<10	22
SCIMW-9	SCI	Filtered	I	8/29/96	6.40	<60	21	61	<2.0	<2.0	<10	--	<20	<10	3.1	0.20	<20	<20	--	37	<5.0	<5.0	<10	<20
SCIMW-9	SCI	Filtered	I	1/23/97	6.66	<60	16	89	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	49	--	40	<5.0	<5.0	<10	150
SCIMW-10	SCI	Filtered	J	8/26/96	7.95	<60	15	55	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	42	<5.0	<5.0	<10	<20
SCIMW-10	SCI	Filtered	J	1/23/97	7.87	<60	24	49	2.3	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	48	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	8/28/96	3.83	<60	<5.0	210	<2.0	<2.0	<10	--	<20	<10	<3.0	0.62	<20	<20	--	16	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	1/17/97	4.32	<60	6.2	300	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	6.6	<5.0	<5.0	<10	<20
SCIMW-11	SCI	Filtered	N	9/23/98	4.72	<60	<5.0	180	<2.0	<5.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-12	SCI	Filtered	O	8/29/96	4.09	<60	5.1	64	2.5	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-12	SCI	Filtered	O	1/17/97	4.53	<60	<5.0	28	2.7	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-13	SCI	Filtered	J	8/29/96	7.21	<60	20	33	<2.0	<2.0	<10	--	<20	<10	3.2	<0.20	<20	<20	--	43	<5.0	<5.0	<10	<20
SCIMW-13	SCI	Filtered	J	1/23/97	6.93	<60	19	21	<2.0	2.1	<10	--	<20	<10	3.7	<0.20	<20	<20	--	40	<5.0	<5.0	<10	<20
SCIMW-14	SCI	Filtered	I/J	8/29/96	5.36	<60	9.7	130	<2.0	<2.0	<10	--	<20	<10	5.3	<0.20	<20	<20	--	34	<5.0	<5.0	<10	<20
SCIMW-14	SCI	Filtered	I/J	1/21/97	5.64	<60	<5.0	15	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	<5.0	<5.0	<5.0	<10	<20
SCIMW-15	SCI	Filtered	I/J	8/29/96	4.85	<60	16	570	<2.0	<2.0	<10	--	<20	<10	3.2	<0.20	<20	<20	--	40	<5.0	<5.0	<10	<20
SCIMW-15	SCI	Filtered	I/J	1/17/97	5.01	<60	13	550	<2.0	<2.0	<10	--	<20	<10	5.5	<0.20	<20	<20	--	33	<5.0	<5.0	<10	<20
SCIMW-16	SCI	Filtered	R	8/30/96	6.81	<60	14	300	3.1	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	40	<5.0	<5.0	12	<20
SCIMW-16	SCI	Filtered	R	1/22/97	7.03	<60	14	220	3.6	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	22	<5.0	<5.0	26	<20
SCIMW-17	SCI	Filtered	R	8/29/96	6.55	<60	17	960	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	18	<5.0	<5.0	<10	<20
SCIMW-17	SCI	Filtered	R	1/22/97	7.67	<60	<5.0	270	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	15	<5.0	<5.0	<10	<20
SCIMW-18	SCI	Filtered	L	9/6/96	5.22+	<60	20	160	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	26	--	22	<5.0	<5.0	19	<20
SCIMW-18	SCI	Filtered	L	1/20/97	6.98	<60	21	250	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	38	<5.0	<5.0	<10	<20
SCIMW-19	SCI	Filtered	R	8/30/96	6.16	<60	32	140	<2.0	<2.0	<10	--	<20	<10	6.2	<0.20	<20	<20	--	32	<5.0	<5.0	11	<20
SCIMW-19	SCI	Filtered	R	1/21/97	7.42	<60	23	150	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	22	--	24	<5.0	<5.0	<10	<20
SCIMW-20	SCI	Filtered	H/Q	9/3/96	7.03	<60	9.5	930	<2.0	<2.0	<10	--	<20	<10	<3.0	0.24	<20	<20	--	20	<5.0	<5.0	<10	<20
SCIMW-20	SCI	Filtered	H/Q	1/20/97	7.67	<60	6.8	1,600	<2.0	<2.0	<10	--	<20	<10	<3.0	<0.20	<20	<20	--	18	<5.0	<5.0	<10	41
SCIMW-20	SCI	Filtered	H/Q	10/7/98	6.79	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-21	SCI	Filtered	D	5/6/97	7.44	--	--	--	--	--	--	--	--	--	7.2	--	--	--	110,000	--	--	--	--	--
SCIMW-22	SCI	Filtered	P	5/6/97	8.22	--	--	--	--	--	--	70	--	--	--	--	--	--	170,000	--	--	--	--	--

TABLE 7
HEAVY METAL CONCENTRATIONS IN GROUNDWATER
NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	DESCRIPTION	SITE REF AREA	SAMPLED	GROUNDWATER ELEVATION Port of Oak Datum (feet)	ANTIMONY (µg/L)	ARSENIC (µg/L)	BARIUM (µg/L)	BERYLLIUM (µg/L)	CADMIUM (µg/L)	TOTAL CHROMIUM (µg/L)	CHROMIUM VI (µg/L)	COBALT (µg/L)	COPPER (µg/L)	LEAD (µg/L)	MERCURY (µg/L)	MOLYBDENUM (µg/L)	NICKEL (µg/L)	POTASSIUM (µg/L)	SELENIUM (µg/L)	SILVER (µg/L)	THALLIUM (µg/L)	VANADIUM (µg/L)	ZINC (µg/L)
SCIMW-23	SCI	Filtered	B	5/6/97	5.55	<60	22	56	<2.0	<5.0	<10	80	<20	<10	<3.0	<0.20	<20	<20	16,000	20	<5.0	<5.0	<10	25
SCIMW-24	SCI	Filtered	N	5/6/97	4.44	--	--	--	--	--	--	160	--	--	6.3	--	--	--	--	--	--	--	--	--
SCIMW-24	SCI	Filtered	N	9/18/98	4.96	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--
SCIMW-25	SCI	Filtered	H	5/7/97	7.30	<60	9.2	56	<2.0	<5.0	<10	60	<20	<10	<3.0	0.26	<20	28	--	14	<5.0	<5.0	<10	<20
SCIMW-26	SCI	Filtered	H	5/6/97	8.15	<60	20	2,900	<2.0	<5.0	<10	140	<20	<10	<3.0	<0.20	<20	<20	--	15	<5.0	<5.0	<10	<20
SCIMW-27	SCI	Filtered	E/H	5/6/97	6.45	<60	10	480	<2.0	<5.0	<10	60	<20	<10	<3.0	<0.20	<20	<20	--	21	<5.0	<5.0	<10	<20
SCIMW-28	SCI	Filtered	Q	5/7/97	8.34	--	--	--	--	--	--	90	--	--	6.9	--	--	--	--	--	--	--	--	--
SCIMW-28	SCI	Filtered	Q	9/25/98	7.83	<60	15	96	2.6	<5.0	<10	--	<20	13	4.1	<0.20	<20	<20	--	<5.0	<5.0	<5.0	11	260
SCIMW-29	SCI	Filtered	H	5/20/97	7.48	<60	<5.0	160	<2.0	<5.0	<10	<10	<20	12	<3.0	<0.20	<20	<20	--	34	<5.0	<5.0	<10	50
SCIMW-34	SCI	Filtered	H	9/24/98	4.87	--	--	--	--	--	--	--	--	--	<3.0	--	--	--	--	--	--	--	--	--

µg/L = micrograms per liter or parts per billion
60 = Compound not detected at or above stated reporting limit

-- = Not tested
+ = Groundwater level may not be stabilized

Groundwater measurements presented are those collected on the first day of sampling for the event and may not be the same as the date sampled.

TABLE 8
 CYANIDE, NITRATE AND PHOSPHORUS CONCENTRATIONS
 IN GROUNDWATER
 NINTH AVENUE TERMINAL STUDY AREA

PRIVILEGED AND CONFIDENTIAL

SAMPLE DESIGNATION	CONSULTANT	SITE REF AREA	DATE SAMPLED	GROUNDWATER ELEVATION Port of Oak. Datum (FEET)	CYANIDE (µg/L)	NITRATE/ NITRITE-N (µg/L)	TOTAL PHOS- PHORUS (µg/L)
MW-5	SCI	F/H	5/6/97	6.45	<10	--	--
MW-6	SCI	F/H	5/6/97	7.04	<10	--	--
SCIMW-21	SCI	D	5/6/97	7.44	--	<50	1,100
SCIMW-22	SCI	P	5/6/97	8.22	<10	<50	4,000
SCIMW-23	SCI	B	5/6/97	5.55	<10	<50	9,300
SCIMW-24	SCI	N	5/6/97	4.44	20	--	--
SCIMW-25	SCI	H	5/7/97	7.30	<10	--	--
SCIMW-26	SCI	H	5/6/97	8.15	<10	--	--
SCIMW-27	SCI	E/H	5/6/97	6.45	<10	--	--
SCIMW-28	SCI	Q	5/7/97	8.34	<10	--	--
SCIMW-29	SCI	H	5/20/97	7.48	<10	--	--

Notes:

µg/L = micrograms per liter or parts per billion

-- = Not tested

<10 = Compound not detected at or above stated reporting limit

Groundwater measurements presented are those collected on the first day of

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
MW-1	TOC Elevation = 9.99						
9/20/93	5.20	4.79	none	1/16/97	4.37	5.62	none
12/1/93	5.15	4.84	none	2/28/97	4.00	5.99	none
3/31/94	4.09	5.90	none	3/26/97	4.80	5.19	none
6/2/94	4.82	5.17	none	5/5/97	5.02	4.97	none
9/30/94	5.63	4.36	none	6/27/97	5.12	4.87	none
12/22/94	5.00	4.99	none	7/23/97	5.20	4.79	none
4/10/95	4.94	5.05	none	8/25/97	5.20	4.79	none
7/24/95	5.02	4.97	none	9/25/97	5.28	4.71	none
11/10/95	5.52	4.47	none	10/30/97	5.40	4.59	none
2/20/96	4.49	5.50	none	12/3/97	5.07	4.92	none
5/23/96	5.04	4.95	none	12/30/97	5.13	4.86	none
6/28/96	5.13	4.86	none	1/28/98	4.95	5.04	none
7/29/96	5.21	4.78	none	3/11/98	4.75	5.24	none
9/3/96	5.37	4.62	none	3/30/98	4.82	5.17	none
9/9/96	5.65	4.34	none	4/27/98	4.92	5.07	none
9/18/96	5.35	4.64	none	6/1/98	4.97	5.02	none
9/23/96	5.36	4.63	none	6/26/98	5.05	4.94	none
9/30/96	5.39	4.60	none	9/17/98	5.31	4.68	none
10/28/96	5.09	4.90	none				
12/2/96	4.80	5.19	none				
12/30/96	4.25	5.74	none				

MW-2	TOC Elevation = 10.32						
9/20/93	4.40	5.92	none	1/16/97	3.99	6.33	none
12/1/93	4.75	5.57	none	2/28/97	3.88	6.44	none
3/31/94	5.01	5.31	none	3/26/97	3.83	6.49	none
6/2/94	4.61	5.71	none	5/5/97	3.85	6.47	none
9/30/94	4.93	5.39	none	6/27/97	3.77	6.55	none
12/22/94	4.43	5.89	none	7/23/97	3.88	6.44	none
4/10/95	4.03	6.29	none	8/25/97	3.88	6.44	none
7/24/95	4.41	5.91	none	9/25/97	3.95	6.37	none
11/10/95	4.59	5.73	none	10/30/97	5.32	5.00	none
2/20/96	3.81	6.51	none	12/3/97	4.98	5.34	none
5/23/96	4.41	5.91	none	12/30/97	4.95	5.37	none
6/28/96	3.81	6.51	none	1/28/98	4.96	5.36	none
7/29/96	3.81	6.51	none	3/11/98	5.02	5.30	none
9/3/96	3.98	6.34	none	3/30/98	4.45	5.87	none
9/9/96	4.00	6.32	none	4/27/98	4.62	5.70	none
9/18/96	4.08	6.24	none	6/1/98	5.15	5.17	none
9/23/96	4.08	6.24	none	6/26/98	4.77	5.55	none
9/30/96	4.08	6.24	none	9/17/98	5.03	5.29	none
10/28/96	4.34	5.98	none				
12/2/96	4.30	6.02	none				
12/30/96	3.92	6.40	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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MW-3		TOC Elevation = 10.18					
9/20/93	15.20	-5.02+	none	3/26/97	4.76	5.42	none
12/1/93	5.70	4.48	none	5/5/97	4.69	5.49	none
3/31/94	4.23	5.95	none	6/27/97	4.51	5.67	none
6/2/94	3.86	6.32	none	7/23/97	4.58	5.60	none
9/30/94	5.44	4.74	none	8/25/97	4.62	5.56	none
12/22/94	4.87	5.31	none	9/25/97	4.53	5.65	none
4/10/95	7.64	2.54+	none	10/30/97	4.70	5.48	none
7/24/95	3.62	6.56	none	12/3/97	4.10	6.08	none
11/10/95	5.11	5.07	none	12/30/97	4.59	5.59	none
2/20/96	4.14	6.04	none	1/28/98	4.59	5.59	none
5/23/96	4.49	5.69	none	3/11/98	4.48	5.70	none
6/28/96	--	--	--	3/30/98	4.31	5.87	none
7/29/96	4.64	5.54	none	4/27/98	4.26	5.92	none
9/3/96	4.48	5.70	none	6/1/98	3.92	6.26	none
9/18/96	6.42	3.76+	none	6/26/98	--	--	--
9/23/96	6.06	4.12	none	9/17/98	4.35	5.83	none
9/30/96	5.18	5.00	none				
10/28/96	4.83	5.35	none				
12/2/96	4.84	5.34	none				
12/30/96	4.84	5.34	none				
1/16/97	4.73	5.45	none				
3/5/97	4.69	5.49	none				

MW-4		TOC Elevation = 11.98					
9/20/93	5.80	6.18	8.04	2/28/97	3.78	8.20	trace
12/1/93	4.10	7.88	trace	3/26/97	3.90	8.08	trace
3/31/94	4.20	7.78	6.96	5/5/97	3.92	8.06	0.13
6/2/94	3.88	8.10	6.00	6/27/97	4.11	7.87	0.50
9/30/94	5.80	6.18	12.00	7/23/97	4.30	7.68	trace
12/22/94	3.47	8.51	10.08	8/25/97	3.55	8.43	trace
4/10/95	3.80	8.18	0.00	9/25/97	3.91	8.07	trace
5/16/95	3.07	8.91	NA	10/30/97	4.98	7.00	0.13
7/24/95	3.65	8.33	0.00	12/3/97	3.60	8.38	0.50
11/10/95	NA	NA	0.00	12/30/97	3.52	8.46	trace
2/20/96	NA	NA	NA	1/28/98	3.02	8.96	0.63
5/23/96	2.96	9.02	0.00	3/11/98	3.28	8.70	trace
6/28/96	3.93	8.05	2.38	3/30/98	3.29	8.69	trace
7/29/96	5.09	6.89	0.50	4/27/98	3.55	8.43	0.25
9/3/96	4.65	7.33	0.25	6/1/98	3.02	8.96	0.19
9/9/96	5.15	6.83	0.50	6/26/98	3.75	8.23	trace
9/18/96	5.45	6.53	0.13	9/17/98	4.45	7.53	0.25
9/23/96	4.80	7.18	0.38				
9/30/96	4.88	7.10	0.06				
10/28/96	5.12	6.86	0.25				
12/2/96	3.22	8.76	2.00				
12/30/96	2.94	9.04	0.25				
1/16/97	3.22	8.76	trace				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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MW-5		TOC Elevation = 11.84					
4/10/95	4.64	7.20	none	6/27/97	5.45	6.39	none
7/24/95	5.24	6.60	none	7/23/97	5.39	6.45	none
11/10/95	5.38	6.46	none	8/25/97	5.18	6.66	none
2/20/96	2.69	9.15	none	9/25/97	5.40	6.44	none
5/23/96	2.67	9.17	none	10/30/97	5.45	6.39	none
6/28/96	5.29	6.55	none	12/3/97	2.42	9.42	none
7/29/96	5.35	6.49	none	12/30/97	5.04	6.80	none
9/3/96	5.44	6.40	none	1/28/98	2.79	9.05	none
9/9/96	5.45	6.39	none	3/11/98	4.54	7.30	none
9/18/96	5.51	6.33	none	3/30/98	4.60	7.24	none
9/23/96	5.51	6.33	none	4/27/98	5.18	6.66	none
9/30/96	5.49	6.35	none	6/1/98	3.17	8.67	none
10/28/96	5.56	6.28	none	6/26/98	5.31	6.53	none
12/2/96	4.64	7.20	none	9/17/98	5.44	6.40	none
12/30/96	2.42	9.42	none				
1/16/97	3.46	8.38	none				
2/28/97	5.14	6.70	none				
3/26/97	5.28	6.56	none				
5/5/97	5.39	6.45	none				

MW-6		TOC Elevation = 11.86					
4/10/95	4.12	7.74	12.00	6/27/97	4.82	7.04	0.50
7/24/95	5.19	6.67	13.20	7/23/97	--	--	--
11/10/95	NA	NA	NA	8/25/97	4.50	7.36	trace
2/20/96	NA	NA	NA	9/25/97	3.94	7.92	7.25
5/23/96	NA	NA	4.50	10/30/97	5.06	6.80	2.00
6/28/96	4.89	6.97	3.00	12/3/97	4.88	6.98	7.00
7/29/96	5.00	6.86	1.00	12/30/97	4.53	7.33+	0.25
9/3/96	5.19	6.67	0.50	1/28/98	4.47	7.39	0.38
9/9/96	5.29	6.57	trace	3/11/98	4.35	7.51	trace
9/18/96	5.34	6.52	trace	3/30/98	4.45	7.41	trace
9/23/96	5.17	6.69	0.13	4/27/98	4.83	7.03	2.00
9/30/96	5.10	6.76	0.13	6/1/98	4.54	7.32	1.50
10/28/96	5.23	6.63	0.13	6/26/98	5.02	6.84	3.00
12/2/96	3.96	7.90	1.00	9/17/98	5.24	6.62	4.00
12/30/96	4.55	7.31	0.33				
1/16/97	4.23	7.63	trace				
2/28/97	4.54	7.32	0.50				
3/26/97	4.54	7.32	trace				
5/5/97	4.82	7.04	0.50				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
MW-7	TOC Elevation = 10.13						
4/10/95	4.41	5.72	none	6/27/97	3.71	6.42	none
7/24/95	3.72	6.41	none	7/23/97	--	--	--
11/10/95	4.78	5.35	none	8/25/97	3.73	6.40	none
2/20/96	4.13	6.00	none	9/25/97	3.75	6.38	none
5/23/96	4.69	5.44	none	10/30/97	3.88	6.25	none
6/28/96	3.81	6.32	none	12/3/97	3.58	6.55	none
7/29/96	4.32	5.81	none	12/30/97	3.67	6.46	none
9/3/96	4.65	5.48	none	1/28/98	3.48	6.65	none
9/9/96	4.79	5.34	none	3/11/98	3.64	6.49	none
9/18/96	4.45	5.68	none	3/30/98	3.65	6.48	none
9/23/96	4.28	5.85	none	4/27/98	3.26	6.87	none
9/30/96	4.18	5.95	none	6/1/98	3.67	6.46	none
10/28/96	4.48	5.65	none	6/26/98	3.63	6.50	none
12/2/96	4.88	5.25	none	9/17/98	3.75	6.38	none
12/30/96	3.62	6.51	none				
1/16/97	3.65	6.48	none				
2/28/97	3.71	6.42	none				
3/26/97	3.71	6.42	none				
5/5/97	3.80	6.33	none				

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
SCIMW-1	TOC Elevation = 10.37						
5/23/96	5.28	5.09	none	8/25/97	5.41	4.96	none
6/28/96	5.75	4.62	none	9/25/97	5.60	4.77	none
7/29/96	5.81	4.56	none	10/30/97	5.79	4.58	none
9/3/96	5.98	4.39	none	12/3/97	4.80	5.57	none
9/9/96	6.04	4.33	none	12/30/97	4.94	5.43	none
9/18/96	6.04	4.33	none	1/28/98	4.59	5.78	none
9/23/96	6.07	4.30	none	3/11/98	4.70	5.67	none
9/30/96	6.00	4.37	none	3/30/98	4.62	5.75	none
10/28/96	6.10	4.27	none	4/27/98	4.84	5.53	none
12/2/96	5.52	4.85	none	6/1/98	4.61	5.76	none
12/30/96	4.66	5.71	none	6/26/98	4.94	5.43	none
1/16/97	5.08	5.29	none	9/17/98	5.35	5.02	none
2/28/97	5.38	4.99	none				
3/26/97	5.54	4.83	none				
5/5/97	5.86	4.51	none				
6/27/97	5.76	4.61	none				
7/23/97	5.59	4.78	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-2 TOC Elevation = 9.92				Tidally Influenced			
5/23/96	5.88	4.04	none	8/25/97	5.90	4.02	none
6/28/96	7.33	2.59	none	9/25/97	3.81	6.11	none
7/29/96	7.43	2.49	none	10/30/97	3.32	6.60	none
9/3/96	6.54	3.38	none	12/3/97	3.54	6.38	none
9/9/96	4.67	5.25	none	12/30/97	3.60	6.32	none
9/18/96	6.50	3.42	none	1/28/98	2.42	7.50	none
9/23/96	3.78	6.14	none	3/11/98	3.33	6.59	none
9/30/96	6.18	3.74	none	3/30/98	7.08	2.84	none
10/28/96	3.72	6.20	none	4/27/98	7.36	2.56	none
12/2/96	6.60	3.32	none	6/1/98	5.78	4.14	none
12/30/96	4.57	5.35	none	6/26/98	7.02	2.90	none
1/16/97	6.10	3.82	none	9/17/98	5.85	4.07	none
2/28/97	7.04	2.88	none				
3/26/97	6.59	3.33	none				
5/5/97	7.03	2.89	none				
6/27/97	6.50	3.42	none				
7/23/97	7.23	2.69	none				

SCIMW-3 TOC Elevation = 11.87				Tidally Influenced			
5/23/96	4.65	7.22	none	8/25/97	5.10	6.77	none
6/28/96	4.86	7.01	none	9/25/97	5.14	6.73	none
7/29/96	5.03	6.84	none	10/30/97	5.55	6.32	none
9/3/96	5.20	6.67	none	12/3/97	5.30	6.57	none
9/9/96	5.28	6.59	none	12/30/97	5.13	6.74	none
9/18/96	5.24	6.63	none	1/28/98	4.71	7.16	none
9/23/96	5.26	6.61	none	3/11/98	--	--	--
9/30/96	5.31	6.56	none	3/30/98	4.13	7.74	none
10/17/96	5.43	6.44	none	4/27/98	4.02	7.85	none
10/28/96	5.58	6.29	none	6/1/98	4.30	7.57	none
12/2/96	5.78	6.09	none	6/26/98	4.11	7.76	none
12/30/96	5.49	6.38	none	9/17/98	7.58	4.29	none
1/16/97	5.41	6.46	none				
2/28/97	5.27	6.60	none				
3/26/97	4.98	6.89	none				
5/5/97	4.93	6.94	none				
6/27/97	4.83	7.04	none				
7/23/97	4.94	6.93	none				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-4		TOC Elevation = 10.03					
9/9/96	4.53	5.50	none	10/30/97	4.03	6.00	none
9/18/96	4.54	5.49	none	12/3/97	2.25	7.78	none
9/23/96	4.32	5.71	none	12/30/97	2.77	7.26	none
9/30/96	4.37	5.66	none	1/28/98	2.95	7.08	none
10/28/96	3.75	6.28	none	3/11/98	1.95	8.08	none
12/2/96	2.09	7.94	none	3/30/98	2.13	7.90	none
12/30/96	1.00	9.03	none	4/27/98	2.45	7.58	none
1/16/97	1.60	8.43	none	6/1/98	2.03	8.00	none
2/28/97	2.16	7.87	none	6/26/98	2.95	7.08	none
3/26/97	2.68	7.35	none	9/17/98	3.83	6.20	none
5/5/97	3.21	6.82	none				
6/27/97	3.13	6.90	none				
7/23/97	3.65	6.38	none				
8/25/97	3.41	6.62	none				
9/25/97	3.90	6.13	none				

SCIMW-5		TOC Elevation = 10.19			Tidally Influenced		
9/9/96	5.56	4.63	none	10/30/97	4.37	5.82	none
9/18/96	4.68	5.51	none	12/3/97	4.21	5.98	none
9/23/96	4.42	5.77	none	12/30/97	4.20	5.99	none
9/30/96	4.44	5.75	none	1/28/98	2.55	7.64	none
10/28/96	4.40	5.79	none	3/11/98	4.38	5.81	none
12/2/96	4.95	5.24	none	3/30/98	3.95	6.24	none
12/30/96	4.21	5.98	none	4/27/98	3.86	6.33	none
1/16/97	4.07	6.12	none	6/1/98	4.66	5.53	none
2/28/97	4.74	5.45	none	6/26/98	3.90	6.29	none
3/26/97	4.53	5.66	none	9/17/98	4.41	5.78	none
5/5/97	4.49	5.70	none				
6/27/97	4.63	5.56	none				
7/23/97	4.74	5.45	none				
8/25/97	4.40	5.79	none				
9/25/97	4.26	5.93	none				

SCIMW-6		TOC Elevation = 10.55			Tidally Influenced		
9/9/96	5.86	4.69	none	10/30/97	5.37	5.18	none
9/18/96	6.54	4.01	none	12/3/97	5.29	5.26	none
9/23/96	5.47	5.08	none	12/30/97	5.42	5.13	none
9/30/96	6.44	4.11	none	1/28/98	3.56	6.99	none
10/28/96	5.93	4.62	none	3/11/98	5.11	5.44	none
12/2/96	7.04	3.51	none	3/30/98	6.46	4.09	none
12/30/96	5.60	4.95	none	4/27/98	6.64	3.91	none
1/16/97	5.87	4.68	none	6/1/98	6.04	4.51	none
2/28/97	7.00	3.55	none	6/26/98	6.23	4.32	none
3/26/97	6.54	4.01	none	9/17/98	6.17	4.38	none
5/5/97	6.72	3.83	none				
6/27/97	6.65	3.90	none				
7/23/97	6.60	3.95	none				
8/25/97	6.15	4.40	none				
9/25/97	5.11	5.44	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-7		TOC Elevation = 12.26					
9/9/96	8.95	3.31+	none	10/30/97	5.30	6.96	none
9/18/96	6.87	5.39	none	12/3/97	4.85	7.41	none
9/23/96	6.95	5.31	none	12/30/97	4.83	7.43	none
9/30/96	7.04	5.22	none	1/28/98	4.65	7.61	none
10/28/96	7.40	4.86	none	3/11/98	4.72	7.54	none
12/2/96	4.95	7.31	none	3/30/98	4.77	7.49	none
12/30/96	4.73	7.53	none	4/27/98	4.85	7.41	none
1/16/97	4.94	7.32	none	6/1/98	4.70	7.56	none
2/28/97	4.85	7.41	none	6/26/98	4.97	7.29	none
3/26/97	4.94	7.32	none	9/17/98	6.52	5.74	none
5/5/97	5.13	7.13	none				
6/27/97	5.86	6.40	none				
7/23/97	6.25	6.01	none				
8/25/97	5.94	6.32	none				
9/25/97	5.93	6.33	none				

SCIMW-8		TOC Elevation = 12.81					
9/9/96	5.70	7.11	none	10/30/97	5.61	7.20	none
9/18/96	5.81	7.00	none	12/3/97	5.09	7.72	none
9/23/96	5.79	7.02	none	12/30/97	4.19	8.62	none
9/30/96	5.89	6.92	none	1/28/98	--	--	--
10/17/96	5.95	6.86	none	3/11/98	--	--	--
10/28/96	6.13	6.68	none	3/30/98	--	--	--
12/2/96	5.39	7.42	none	4/27/98	5.06	7.75	none
12/30/96	4.98	7.83	none	6/1/98	4.18	8.63	none
1/16/97	5.11	7.70	none	6/26/98	5.17	7.64	none
2/28/97	5.42	7.39	none	9/17/98	5.56	7.25	none
3/26/97	5.39	7.42	none				
5/5/97	5.40	7.41	none				
6/27/97	5.45	7.36	none				
7/23/97	--	--	--				
8/25/97	5.21	7.60	none				
9/25/97	5.49	7.32	none				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-9		TOC Elevation = 11.32					
9/9/96	4.92	6.40	none	10/30/97	4.90	6.42	none
9/18/96	4.94	6.38	none	12/3/97	--	--	--
9/23/96	4.94	6.38	none	12/30/97	4.60	6.72	none
9/30/96	4.92	6.40	none	1/28/98	4.40	6.92	none
10/17/96	4.97	6.35	none	3/11/98	4.11	7.21	none
10/28/96	5.07	6.25	none	3/30/98	4.38	6.94	none
12/2/96	4.71	6.61	none	4/27/98	4.35	6.97	none
12/30/96	4.51	6.81	none	6/1/98	4.08	7.24	none
1/16/97	4.66	6.66	none	6/26/98	4.42	6.90	none
3/26/97	4.60	6.72	none	9/17/98	4.68	6.64	none
5/5/97	4.65	6.67	none				
6/27/97	4.71	6.61	none				
7/23/97	4.77	6.55	none				
8/25/97	4.72	6.60	none				
9/25/97	--	--	--				

SCIMW-10		TOC Elevation = 12.56					
9/9/96	4.61	7.95	none	8/25/97	6.07	6.49	none
9/18/96	4.87	7.69	none	9/25/97	5.90	6.66	none
9/23/96	4.81	7.75	none	10/30/97	6.60	5.96	none
9/30/96	4.91	7.65	none	12/3/97	--	--	--
10/17/96	5.03	7.53	none	12/30/97	6.10	6.46	none
10/28/96	5.31	7.25	none	1/28/98	4.97	7.59	none
12/2/96	5.15	7.41	none	3/11/98	--	--	--
12/30/96	4.60	7.96	none	3/30/98	5.36	7.20	none
1/16/97	4.69	7.87	none	4/27/98	5.21	7.35	none
2/28/97	4.47	8.09	none	6/1/98	5.18	7.38	none
3/26/97	4.33	8.23	none	6/26/98	5.17	7.39	none
5/5/97	4.21	8.35	none	9/17/98	4.92	7.64	none
6/27/97	5.71	6.85	none				
7/23/97	5.96	6.60	none				

SCIMW-11		TOC Elevation = 9.49		Tidally Influenced			
9/9/96	5.66	3.83	none	10/30/97	3.81	5.68	none
9/18/96	6.39	3.10	none	12/3/97	4.85	4.64	none
9/23/96	4.12	5.37	none	12/30/97	1.63	7.86	none
9/30/96	6.24	3.25	none	1/28/98	3.64	5.85	none
10/28/96	5.46	4.03	none	3/11/98	3.37	6.12	none
12/2/96	6.03	3.46	none	3/30/98	7.02	2.47	none
12/30/96	3.56	5.93	none	4/27/98	7.33	2.16	none
1/16/97	5.17	4.32	none	6/1/98	--	--	--
2/28/97	6.60	2.89	none	6/26/98	--	--	--
3/26/97	6.85	2.64	none	9/23/98	4.77	4.72	none
5/5/97	6.94	2.55	none				
6/27/97	5.94	3.55	none				
7/23/97	7.18	2.31	none				
8/25/97	5.04	4.45	none				
9/25/97	3.31	6.18	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-12 TOC Elevation = 10.94				Tidally Influenced			
9/9/96	6.85	4.09	none	9/25/97	4.69	6.25	none
9/18/96	7.24	3.70	none	10/30/97	5.24	5.70	none
9/23/96	5.59	5.35	none	12/3/97	6.53	4.41	none
9/30/96	7.26	3.68	none	12/30/97	2.90	8.04	none
10/28/96	7.00	3.94	none	1/28/98	5.11	5.83	none
12/2/96	7.31	3.63	none	3/11/98	4.83	6.11	none
12/30/96	5.12	5.82	none	3/30/98	7.22	3.72	none
1/16/97	6.41	4.53	none	4/27/98	7.23	3.71	none
2/28/97	7.19	3.75	none	6/1/98	7.00	3.94	none
3/26/97	7.24	3.70	none	6/1/98	7.20	3.74	none
5/5/97	7.26	3.68	none	9/17/98	6.80	4.14	none
6/27/97	7.09	3.85	none				
7/23/97	7.24	3.70	none				
8/25/97	6.61	4.33	none				

SCIMW-13 TOC Elevation = 12.56							
9/9/96	5.35	7.21	none	12/3/97	5.55	7.01	none
9/18/96	5.47	7.09	none	12/30/97	5.43	7.13	none
9/23/96	5.51	7.05	none	1/28/98	5.08	7.48	none
9/30/96	4.94	7.62	none	3/11/98	4.46	8.10	none
10/17/96	5.70	6.86	none	3/30/98	4.42	8.14	none
10/28/96	5.86	6.70	none	4/27/98	4.22	8.34	none
12/2/96	5.91	6.65	none	6/1/98	4.24	8.32	none
12/30/96	5.70	6.86	none	6/26/98	4.25	8.31	none
1/16/97	5.63	6.93	none	9/17/98	5.14	7.42	none
2/28/97	5.31	7.25	none				
3/26/97	5.14	7.42	trace				
5/5/97	4.99	7.57	none				
6/27/97	4.92	7.64	none				
7/23/97	--	--	--				
8/25/97	--	--	--				
9/25/97	5.14	7.42	none				
10/30/97	5.75	6.81	none				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-14 TOC Elevation = 13.64

9/9/96	8.28	5.36	none	10/30/97	8.17	5.47	none
9/18/96	8.50	5.14	none	12/3/97	7.58	6.06	none
9/23/96	8.18	5.46	none	12/30/97	7.52	6.12	none
9/30/96	8.41	5.23	none	1/28/98	7.19	6.45	none
10/28/96	8.43	5.21	none	3/11/98	7.21	6.43	none
12/2/96	8.56	5.08	none	3/30/98	7.41	6.23	none
12/30/96	7.89	5.75	none	4/27/98	7.99	5.65	none
1/16/97	8.00	5.64	none	6/1/98	7.59	6.05	none
2/28/97	8.48	5.16	none	6/26/98	8.07	5.57	none
3/26/97	8.34	5.30	none	9/17/98	8.16	5.48	none
5/5/97	8.30	5.34	none				
6/27/97	8.20	5.44	none				
7/23/97	8.30	5.34	none				
8/25/97	8.09	5.55	none				
9/25/97	7.81	5.83	none				

SCIMW-15 TOC Elevation = 13.45

9/9/96	8.60	4.85	none	10/30/97	--	--	--
9/18/96	8.61	4.84	none	12/3/97	8.21	5.24	none
9/23/96	8.62	4.83	none	12/30/97	8.23	5.22	none
9/30/96	8.51	4.94	none	1/28/98	8.14	5.31	none
10/28/96	8.72	4.73	none	3/11/98	--	--	--
12/2/96	8.91	4.54	none	3/30/98	--	--	--
12/30/96	8.36	5.09	none	4/27/98	--	--	--
1/16/97	8.44	5.01	none	6/1/98	8.11	5.34	none
2/28/97	8.54	4.91	none	6/26/98	8.00	5.45	none
3/26/97	8.57	4.88	none	9/17/98	8.28	5.17	none
5/5/97	8.73	4.72	none				
6/27/97	8.42	5.03	none				
7/23/97	8.28	5.17	none				
8/25/97	8.31	5.14	none				
9/25/97	8.32	5.13	none				

SCIMW-16 TOC Elevation = 10.40

9/9/96	3.59	6.81	none	10/30/97	3.19	7.21	none
9/18/96	3.46	6.94	none	12/3/97	3.22	7.18	none
9/23/96	3.44	6.96	none	12/30/97	--	--	--
9/30/96	3.44	6.96	none	1/28/98	--	--	--
10/28/96	4.39	6.01	none	3/11/98	3.23	7.17	none
12/2/96	3.64	6.76	none	3/30/98	3.24	7.16	none
12/30/96	3.19	7.21	none	4/27/98	3.26	7.14	none
1/16/97	3.37	7.03	none	6/1/98	3.10	7.30	none
2/28/97	3.47	6.93	none	6/26/98	3.07	7.33	none
3/26/97	3.39	7.01	none	9/17/98	3.36	7.04	none
5/5/97	3.27	7.13	none				
6/27/97	3.27	7.13	none				
7/23/97	3.39	7.01	none				
8/25/97	3.11	7.29	none				
9/25/97	3.35	7.05	none				

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NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-17		TOC Elevation = 10.14					
9/9/96	3.59	6.55	none	10/30/97	3.17	6.97	none
9/18/96	2.83	7.31	none	12/3/97	4.94	5.20+	none
9/23/96	2.96	7.18	none	12/30/97	2.67	7.47	none
9/30/96	3.00	7.14	none	1/28/98	2.25	7.89	none
10/28/96	3.04	7.10	none	3/11/98	2.25	7.89	none
12/2/96	2.86	7.28	none	3/30/98	2.35	7.79	none
12/30/96	0.18	9.96	none	4/27/98	2.36	7.78	none
1/16/97	2.47	7.67	none	6/1/98	2.27	7.87	none
2/28/97	2.63	7.51	none	6/26/98	4.51	5.63	none
3/26/97	2.51	7.63	none	9/17/98	3.20	6.94	none
5/5/97	2.63	7.51	none				
6/27/97	1.87	8.27	none				
7/23/97	5.61	4.53+	none				
8/25/97	3.65	6.49	none				
9/25/97	5.50	4.64+	none				

SCIMW-18		TOC Elevation = 10.81					
9/9/96	5.59	5.22+	none	10/30/97	3.97	6.84	none
9/18/96	3.86	6.95	none	12/3/97	3.85	6.96	none
9/23/96	3.82	6.99	none	12/30/97	3.83	6.98	none
9/30/96	3.85	6.96	none	1/28/98	3.57	7.24	none
10/17/96	4.00	6.81	none	3/11/98	3.40	7.41	none
10/28/96	4.18	6.63	none	3/30/98	3.36	7.45	none
12/2/96	4.06	6.75	none	4/27/98	3.15	7.66	none
12/30/96	3.60	7.21	none	6/1/98	3.09	7.72	none
1/16/97	3.83	6.98	none	6/26/98	3.15	7.66	none
2/28/97	3.56	7.25	none	9/17/98	3.58	7.23	none
3/26/97	4.70	6.11	none				
5/5/97	3.36	7.45	none				
6/27/97	3.17	7.64	none				
7/23/97	3.42	7.39	none				
8/25/97	3.49	7.32	none				
9/25/97	3.42	7.39	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-19 TOC Elevation = 10.46

9/9/96	4.30	6.16	none	10/30/97	4.12	6.34	none
9/18/96	4.36	6.10	none	12/3/97	3.11	7.35	none
9/23/96	4.32	6.14	none	12/30/97	3.52	6.94	none
9/30/96	4.23	6.23	none	1/28/98	2.91	7.55	none
10/28/96	4.45	6.01	none	3/11/98	3.08	7.38	none
12/2/96	3.54	6.92	none	3/30/98	3.16	7.30	none
12/30/96	2.59	7.87	none	4/27/98	3.38	7.08	none
1/16/97	3.04	7.42	none	6/1/98	3.00	7.46	none
2/28/97	3.69	6.77	none	6/26/98	3.58	6.88	none
3/26/97	3.69	6.77	none	9/17/98	4.08	6.38	none
5/5/97	3.82	6.64	none				
6/27/97	3.94	6.52	none				
7/23/97	3.89	6.57	none				
8/25/97	3.78	6.68	none				
9/25/97	4.02	6.44	none				

SCIMW-20 TOC Elevation = 9.11

9/9/96	2.08	7.03	none	10/30/97	2.02	7.09	none
9/18/96	2.27	6.84	none	12/3/97	1.38	7.73	none
9/23/96	2.26	6.85	none	12/30/97	1.61	7.50	none
9/30/96	2.34	6.77	none	1/28/98	1.30	7.81	none
10/28/96	2.68	6.43	none	3/11/98	1.35	7.76	none
12/2/96	1.45	7.66	none	3/30/98	1.43	7.68	none
12/30/96	1.12	7.99	none	4/27/98	1.51	7.60	none
1/16/97	1.44	7.67	none	6/1/98	1.29	7.82	none
2/28/97	1.60	7.51	none	6/26/98	1.76	7.35	none
3/26/97	1.54	7.57	none	9/17/98	2.32	6.79	none
5/5/97	1.65	7.46	none				
6/27/97	1.92	7.19	none				
7/23/97	2.05	7.06	none				
8/25/97	1.62	7.49	none				
9/25/97	1.88	7.23	none				

SCIMW-21 TOC Elevation = 9.67

5/5/97	2.23	7.44	none	3/11/98	1.27	8.40	none
6/27/97	2.40	7.27	none	3/30/98	1.35	8.32	none
7/23/97	2.75	6.92	none	4/27/98	1.41	8.26	none
8/25/97	2.87	6.80	none	6/1/98	1.16	8.51	none
9/25/97	3.00	6.67	none	6/26/98	1.76	7.91	none
10/30/97	3.16	6.51	none	9/17/98	2.13	7.54	none
12/3/97	2.21	7.46	none				
12/30/97	2.11	7.56	none				
1/28/98	1.67	8.00	none				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-22		TOC Elevation = 12.00					
5/5/97	3.78	8.22	none	3/30/98	3.87	8.13	none
6/27/97	4.10	7.90	none	4/27/98	4.21	7.79	none
7/23/97	4.34	7.66	none	6/1/98	3.59	8.41	none
8/25/97	4.04	7.96	none	6/26/98	4.21	7.79	none
9/25/97	4.31	7.69	none	9/17/98	4.76	7.24	none
10/30/97	4.39	7.61	none				
12/3/97	4.05	7.95	none				
12/30/97	4.48	7.52	none				
1/28/98	4.03	7.97	none				
3/11/98	4.07	7.93	none				

SCIMW-23		TOC Elevation = 9.74					
Slight Tidal Influence							
5/5/97	4.19	5.55	none	3/30/98	3.35	6.39	none
6/27/97	4.10	5.64	none	4/27/98	--	--	--
7/23/97	4.43	5.31	none	6/1/98	--	--	--
8/25/97	4.37	5.37	none	6/26/98	--	--	--
9/25/97	--	--	--	9/17/98	4.28	5.46	none
10/30/97	4.27	5.47	none				
12/3/97	3.24	6.50	none				
12/30/97	3.52	6.22	none				
1/28/98	3.02	6.72	none				
3/11/98	3.32	6.42	none				

SCIMW-24		TOC Elevation = 9.74					
Slight Tidal Influence							
5/5/97	5.30	4.44	none	3/30/98	4.23	5.51	none
6/27/97	4.85	4.89	none	4/27/98	4.55	5.19	none
7/23/97	4.79	4.95	none	6/1/98	3.96	5.78	none
8/25/97	4.28	5.46	none	6/26/98	4.21	5.53	none
9/25/97	4.45	5.29	none	9/17/98	4.78	4.96	none
10/30/97	4.67	5.07	none				
12/3/97	3.63	6.11	none				
12/30/97	3.58	6.16	none				
1/28/98	3.58	6.16	none				
3/11/98	--	--	--				

SCIMW-25		TOC Elevation = 8.30					
5/5/97	1.00	7.30	none	3/30/98	0.65	7.65	none
6/27/97	2.11	6.19	none	4/27/98	0.73	7.57	none
7/23/97	1.94	6.36	none	6/1/98	0.55	7.75	none
8/25/97	1.53	6.77	none	6/26/98	0.75	7.55	none
9/25/97	1.46	6.84	none	9/17/98	1.11	7.19	none
10/30/97	1.08	7.22	none				
12/3/97	0.87	7.43	none				
12/30/97	0.83	7.47	none				
1/28/98	0.70	7.60	none				
3/11/98	0.50	7.80	none				

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-26 TOC Elevation = 11.33				DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
5/5/97	3.18	8.15	none	3/30/98	4.13	7.20	none
6/27/97	3.31	8.02	none	4/27/98	3.93	7.40	none
7/23/97	3.46	7.87	none	6/1/98	3.56	7.77	none
8/25/97	3.21	8.12	none	6/26/98	3.65	7.68	none
9/25/97	3.42	7.91	none	9/17/98	3.92	7.41	none
10/30/97	3.56	7.77	none				
12/3/97	2.55	8.78	none				
12/30/97	3.25	8.08	none				
1/28/98	2.93	8.40	none				
3/11/98	3.98	7.35	none				

SCIMW-27 TOC Elevation = 11.43				DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
5/5/97	4.98	6.45	none	3/30/98	4.71	6.72	none
6/27/97	4.85	6.58	none	4/27/98	4.53	6.90	none
7/23/97	4.80	6.63	none	6/1/98	4.74	6.69	none
8/25/97	4.81	6.62	none	6/26/98	4.74	6.69	none
9/25/97	4.85	6.58	none	9/17/98	4.85	6.58	none
10/30/97	4.91	6.52	none				
12/3/97	4.74	6.69	none				
12/30/97	4.75	6.68	none				
1/28/98	4.37	7.06	none				
3/11/98	4.70	6.73	none				

SCIMW-28 TOC Elevation = 13.30				DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
5/5/97	4.96	8.34	none	3/30/98	4.27	9.03	none
6/27/97	5.12	8.18	none	4/27/98	4.41	8.89	none
7/23/97	--	--	--	6/1/98	4.25	9.05	none
8/25/97	5.04	8.26	none	6/26/98	4.70	8.60	none
9/25/97	5.23	8.07	none	9/17/98	5.47	7.83	none
10/30/97	5.39	7.91	none				
12/3/97	4.47	8.83	none				
12/30/97	4.72	8.58	none				
1/28/98	4.16	9.14	none				
3/11/98	4.20	9.10	none				

SCIMW-29 TOC Elevation = 13.18				DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
5/15/97	5.70	7.48	none	3/30/98	5.37	7.81	none
6/27/97	5.58	7.60	none	4/27/98	5.48	7.70	none
7/23/97	5.63	7.55	none	6/1/98	5.26	7.92	none
8/25/97	5.56	7.62	none	6/26/98	5.50	7.68	none
9/25/97	5.61	7.57	none	9/17/98	5.67	7.51	none
10/30/97	5.63	7.55	none				
12/3/97	5.23	7.95	none				
12/30/97	5.52	7.66	none				
1/28/98	5.29	7.89	none				
3/11/98	5.37	7.81	none				

**TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA**

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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SCIMW-30 TOC Elevation = 12.34

10/30/97	4.81	7.53	none	3/30/98	4.21	8.13	none
12/3/97	3.99	8.35	none	4/27/98	4.35	7.99	none
12/30/97	4.26	8.08	none	6/1/98	4.15	8.19	none
1/28/98	3.75	8.59	none	6/26/98	4.51	7.83	none
3/11/98	3.81	8.53	none	9/17/98	4.71	7.63	none

Extends into Merrit Sand Formation below estuarine deposits.

SCIMW-31D TOC Elevation = 11.92

Displays confined aquifer characteristics.

10/30/97	7.69	4.23	none	3/30/98	7.35	4.57	none
12/3/97	7.58	4.34	none	4/27/98	7.54	4.38	none
12/30/97	7.47	4.45	none	6/1/98	7.57	4.35	none
1/28/98	7.37	4.55	none	6/26/98	7.63	4.29	none
3/11/98	7.20	4.72	none	9/17/98	7.58	4.34	none

SCIMW-32 TOC Elevation = 12.75

10/30/97	5.02	7.73	none	3/30/98	4.39	8.36	none
12/3/97	4.50	8.25	none	4/27/98	4.34	8.41	none
12/30/97	4.59	8.16	none	6/1/98	4.33	8.42	none
1/28/98	--	--	--	6/26/98	4.53	8.22	none
3/11/98	4.17	8.58	none	9/17/98	5.04	7.71	none

SCIMW-33 TOC Elevation = 11.47

10/30/97	4.58	6.89	none	3/30/98	4.00	7.47	none
12/3/97	4.11	7.36	none	4/27/98	3.96	7.51	none
12/30/97	4.07	7.40	none	6/1/98	3.86	7.61	none
1/28/98	4.03	7.44	none	6/26/98	4.05	7.42	none
3/11/98	4.02	7.45	none	9/17/98	4.32	7.15	none

SCIMW-34 TOC Elevation = 10.93

Tidally Influenced

10/30/97	6.05	4.88	none	3/30/98	5.82	5.11	none
12/3/97	5.48	5.45	none	4/27/98	6.14	4.79	none
12/30/97	5.43	5.50	none	6/1/98	6.05	4.88	none
1/28/98	5.30	5.63	none	6/26/98	5.81	5.12	none
3/11/98	6.01	4.92	none	9/17/98	6.06	4.87	none

SCIMW-35 TOC Elevation = 10.10

Tidally Influenced

10/30/97	5.23	4.87	none	3/30/98	4.90	5.20	none
12/3/97	4.06	6.04	none	4/27/98	5.23	4.87	none
12/30/97	4.01	6.09	none	6/1/98	5.01	5.09	none
1/28/98	4.30	5.80	none	6/26/98	4.97	5.13	none
3/11/98	4.98	5.12	none	9/17/98	5.36	4.74	none

TABLE 9
SUMMARY OF GROUNDWATER ELEVATION DATA
NINTH AVENUE TERMINAL STUDY AREA

DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)	DATE	GROUND WATER DEPTH (FEET)	GROUND WATER ELEVATION	PRODUCT THICKNESS (INCHES)
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Oil Filled

Manhole

TOC Elevation = 12.39

Hydraulically connected to Bay water. Tidally Influenced.

12/30/96	6.22	6.17	trace	1/28/98	6.00	6.39	trace
1/16/97	8.00	4.39	0.01	3/11/98	5.92	6.47	trace
2/28/97	8.42	3.97	0.01	3/30/98	8.33	4.06	trace
3/26/97	8.42	3.97	trace	4/27/98	8.50	3.89	trace
5/5/97	8.51	3.88	0.06	6/1/98	8.33	4.06	trace
6/27/97	8.42	3.97	trace	6/26/98	8.42	3.97	trace
7/23/97	8.42	3.97	trace	9/17/98	8.42	3.97	trace
8/25/97	7.67	4.72	trace				
9/25/97	6.17	6.22	trace				
10/30/97	6.42	5.97	0.00				
12/3/97	8.08	4.31	0.00				
12/30/97	4.50	7.89	trace				

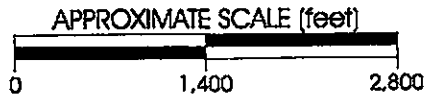
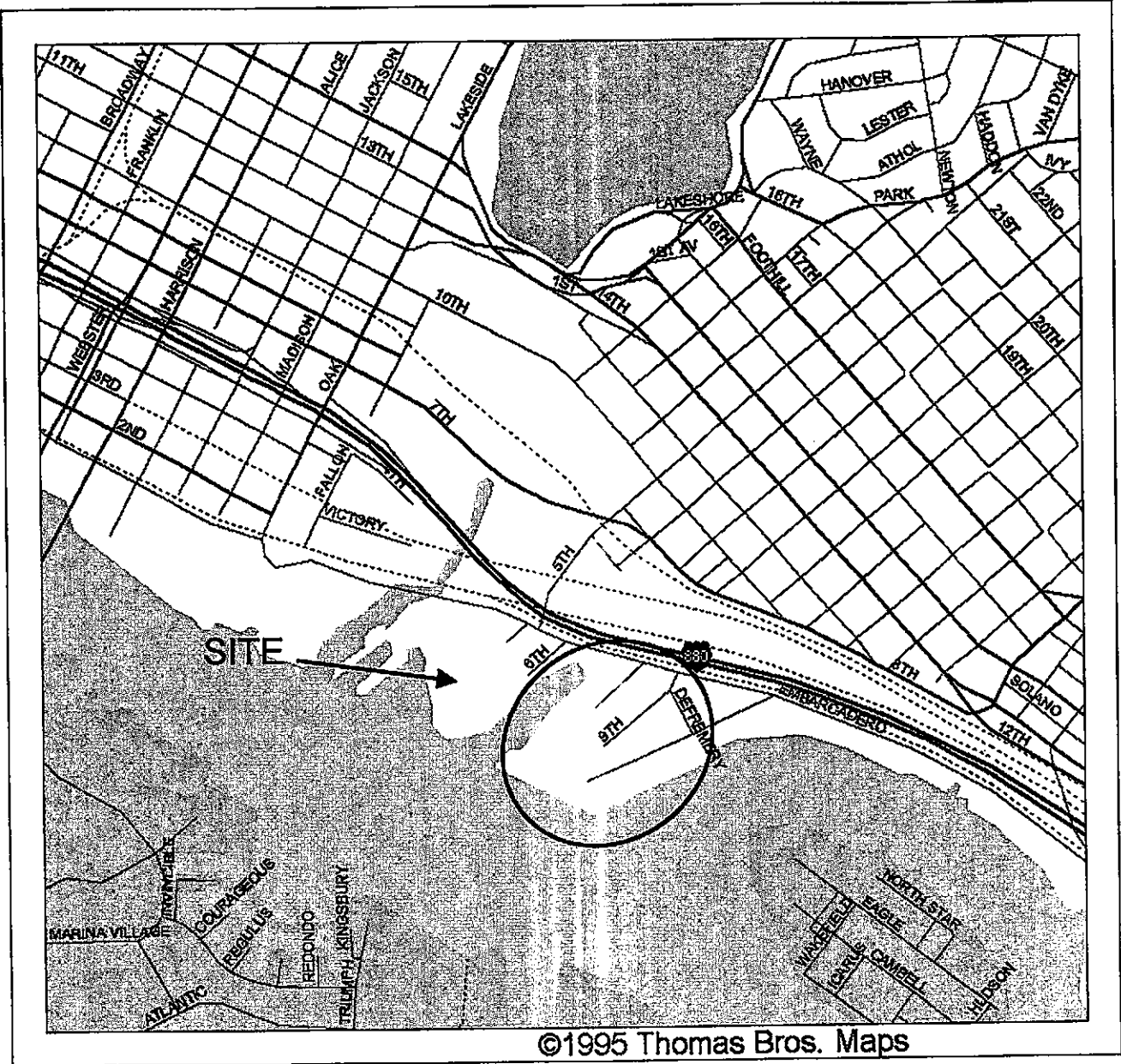
Notes:

All elevations presented reference the Port of Oakland datum

-- = Inaccessible

NA = Data not available

+ = Elevation is probably not static



SITE VICINITY MAP

NINTH AVENUE TERMINAL STUDY AREA
OAKLAND, CALIFORNIA

PLATE

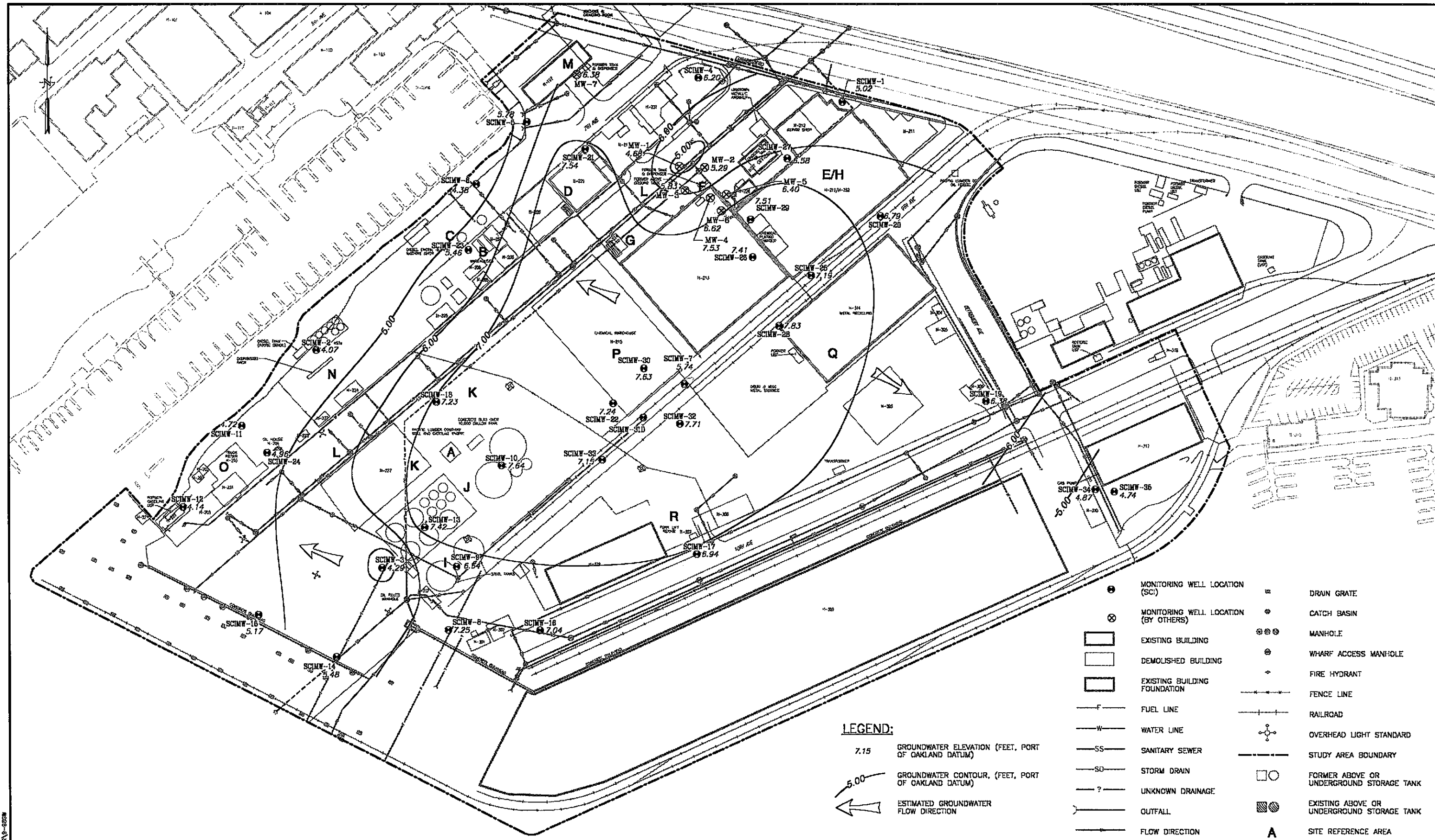
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Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

JOB NUMBER
133.009

DATE
12/16/98

APPROVED
[Signature]

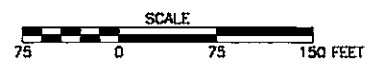


LEGEND:

- 7.15 GROUNDWATER ELEVATION (FEET, PORT OF OAKLAND DATUM)
- 5.00 GROUNDWATER CONTOUR, (FEET, PORT OF OAKLAND DATUM)
- ← ESTIMATED GROUNDWATER FLOW DIRECTION
- MONITORING WELL LOCATION (SCI)
- ⊗ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- ▭ EXISTING BUILDING FOUNDATION
- FUEL LINE
- W WATER LINE
- SS SANITARY SEWER
- SD STORM DRAIN
- ? UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- ⊠ DRAIN GRATE
- ⊙ CATCH BASIN
- ⊗ MANHOLE
- ⊗ WHARF ACCESS MANHOLE
- ⊙ FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ○ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ▨ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA

NOTES:
 1. UTILITY SURVEY WAS PREPARED BY AN WEST 5-22-86

REFERENCE DRAWINGS
 BASE MAP BY PORT OF OAKLAND DATED 2-22-86



DESIGNED BY —
 DRAWN BY RDP/DJP
 CHECKED BY JLR
 APPROVED BY JLR
 DATE 5-13-98



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**NINTH AVENUE TERMINAL
 PORT OF OAKLAND**
GROUNDWATER ELEVATION CONTOURS
SEPTEMBER 1998

SCALE AS SHOWN
 PROJECT NO. 133.009
 PLATE NO. — OF 2

198805.131411 H:\SS\VOT-CUR\9-86\SW



Subsurface Consultants, Inc.

R. William Rudolph, P.E.
President

August 5, 1998
SCI 133.009

Mr. Barney Chan
Alameda County Health Care Services Agency
1331 Harbor Bay Parkway, Suite 200
Alameda, Oakland 94502

**Work Plan
Groundwater Monitoring Program
Ninth Avenue Terminal Site
Oakland, California**

Dear Mr. Chan:

Subsurface Consultants, Inc. (SCI) is pleased to present this groundwater monitoring program work plan for the Ninth Avenue Terminal site. Currently, there are 42 monitoring wells at the subject site, all of which have been sampled at least once. The wells are strategically placed to provide information regarding groundwater quality in specific source areas, as well as at the perimeter of the property to address potential migration of contaminants onto and off the site. The program proposed herein outlines the first year of monitoring. The scope of work has been discussed, reviewed, and approved by a group of consultants and representatives of both the Port of Oakland and several of its insurance carriers. We hope that it also meets with your approval.

The attached Table 1 summarizes the entire monitoring program for the first year. Plates 1 through 4 graphically present the four events proposed for the year. Please be advised that the Port and its insurers believe that the scope of subsequent monitoring events will be determined after completion of this year, and intend to petition for a reduced scope compared to the scope proposed for the first year.

GENERAL MONITORING PROCEDURES

Monitoring will be performed in accordance with EPA protocols and industry standards of practice. This will include collecting and analyzing one duplicate sample and analyzing one travel blank for volatile organic compounds (VOC) each event.

For each event, the selected wells will be checked for the presence of free floating product using a steel tape coated with petroleum sensitive paste. Wells which contain free floating product will

Mr. Barney Chan
Alameda County Health Care Services Agency
August 5, 1998
SCI 133.009
Page 2

not be purged or sampled. The depth to groundwater below top of casing will be measured using an electric well sounder. The time of the event and the height of the tide will be recorded. All equipment used during the events will be thoroughly cleaned between each well. A well sampling form will be completed for each well scheduled to be sampled during an event.

A minimum of three well volumes of groundwater will be purged from each well sampled. Disposable bailers will be used for purging. The wells will be sampled once groundwater has recharged to within at least 80 percent of its initial level and pH, temperature, and electrical conductivity of the groundwater become relatively stabilized. Purge water will be placed in 55-gallon steel drums and left onsite for later disposal by others.

Groundwater samples will be retained in glass and polyethylene containers pre-cleaned by the supplier in accordance with EPA protocol. The samples will be placed in ice filled chests and will remain refrigerated until transmitted to the analytical laboratory. Chain-of-custody records will accompany the samples to the laboratory.

WELL SAMPLING RATIONALE AND FREQUENCY

The rationale for the proposed monitoring program is summarized in the attached Table 1. In general, the rationale is based on the location of the wells, the number of times the wells have been sampled, and the presence of contaminants of concern. Table 1 presents the program details organized numerically by well designation. In addition, plans showing the wells proposed to be sampled each quarter have also been included as Plates 1 through 4. Subject to your approval of this plan, the first monitoring event will be implemented in August 1998.

Three of the onsite wells will be monitored for water levels only on a semi-annual basis. Monitoring Well MW-7 is located in the area of a former underground storage tank near Building H-107 (see Plate 1). This well has been sampled eight times and contains only low levels of total extractable hydrocarbons. We petition the Alameda County Health Care Services Agency (ACHCSA) to consider this tank area for closure.

Monitoring Well MW-25 is located in the depressed trackage area behind Building H-232 and Well MW-29 is located inside Building H-232 adjacent to former plating sumps (see Plate 1). No significant impacts were detected when these wells were previously sampled. Other wells exist in their vicinity which will be sampled, hence it would be redundant to continue monitoring of these wells.

The first event for the year will be an annual event, which will include obtaining samples from 39 of the 42 wells. The wells to be sampled during the annual event are shown on Plate 1. We propose one-time sampling for several of these wells. Wells which will only be sampled during

Mr. Barney Chan
Alameda County Health Care Services Agency
August 5, 1998
SCI 133.009
Page 3

this event are so designated on Plate 1 and include wells in the immediate area of the 1992 KOT release point (MW-1, MW-2, MW-3, MW-4, and MW-6); selected perimeter wells (SCIMW-1, SCIMW-4, SCIMW-8, SCIMW-16, SCIMW-17, and SCIMW-19 through SCIMW-21); and interior wells where detected concentrations have been relatively uniform SCIMW-3, SCIMW-9, SCIMW-10, SCIMW-13, SCIMW-18, SCIMW-26, and SCIMW-27). Wells proposed for quarterly and semi-annual sampling as defined below, will also be sampled during this event. The quarterly and semi-annually sampled wells are designated on Plate 1. During this event, water levels will be measured in all wells and any free floating product observed will be removed.

Wells situated along portions of the exposed shoreline will be sampled during each event. The shoreline wells include wells SCIMW-2, SCIMW-5, SCIMW-6, SCIMW-11, SCIMW-12, SCIMW-14, SCIMW-23, SCIMW-24, SCIMW-34, and SCIMW-35. These wells, as shown on Plates 2 and 4, will be the only wells sampled during the second and fourth events of the year. During these quarterly events, water levels will be measured in these wells and any wells where free floating product has been observed. Any free product observed will be removed.

The third event for the year will be the semi-annual event. In addition to sampling the shoreline wells, interior wells adjacent to significant source areas (Well MW-5 near the 1992 KOT release point, wells in the immediate vicinity of the VOC plume [SCIMW-7, SCIMW-22, SCIMW-30, SCIMW-3 ID, SCIMW-32, and SCIMW-33], and Well SCIMW-28 near the Lakeside Metals yard slab), and Well SCIMW-15 adjacent to the concrete bulkhead will be sampled. The wells proposed for semi-annual sampling event are shown on Plate 3. During this event, water levels will be measured in all wells and any free floating product observed will be removed.

ANALYTIC TESTING PROGRAM

In general, the analytical testing program is focused to evaluate potential impacts to groundwater from known source areas and contaminants of concern detected in soil and groundwater to date. The program also includes screening for environmental parameters (pH, Eh, TDS, dissolved oxygen, and dissolved organic carbon) to monitor conditions of the plume and the evaluation of both filtered and unfiltered samples to provide adequate data for the evaluation of potential ecological risks, should the Port and/or its insurance carriers decide that such a study is appropriate in the future.

The proposed analytical testing program includes the detected contaminants of concern described below.

- Full range of petroleum hydrocarbon analytes. Impacts from former releases of gasoline, diesel, motor oil, waste oil, oil and grease, cutting oils, and asphalt products have been

Mr. Barney Chan
Alameda County Health Care Services Agency
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Page 4

detected widespread at the site. The total extractable hydrocarbon analyses will be performed following a silica gel clean-up procedure conducted by the laboratory to remove potential interference due to the presence of naturally occurring hydrocarbons. If the silica gel clean-up procedure does not significantly alter the measured total extractable hydrocarbon concentrations, then the silica gel clean-up procedure will not be used during subsequent events.

- VOCs. Acetone has been detected widespread at the site without a known source being identified to date. Chlorinated solvents historically were used and stored in a variety of locations and have been detected in the "oil filled manhole" and in specific source areas.
- Polynuclear aromatic hydrocarbons. Various polynuclear aromatic hydrocarbons have been detected in soil and groundwater in specific source areas. These compounds are known to bioaccumulate and therefore present a risk to human health and the ecological environment through a variety of exposure pathways. Both filtered and unfiltered samples will be analyzed to assist in this evaluation.
- Chlorinated pesticides and polychlorinated biphenyls (PCBs). Chlorinated pesticides have been detected in known source areas at the site where pesticide formulating and transportation was performed. PCBs have been detected where cutting oils were likely used and where waste oil products were reprocessed.
- Heavy metals. A variety of heavy metals has been detected across the site. These metals are known to bioaccumulate and therefore present a risk to human health and the ecological environment through a variety of exposure pathways.

Following the first two events of the year, the polynuclear aromatic hydrocarbon and chlorinated pesticide data will be reviewed to determine whether these chemical tests need to be continued for the remaining events of the year.

REPORTING

The results of each event will be summarized in a letter report. The reports will present the analytical data summarized in tables, a groundwater gradient map, well sampling forms and the laboratory test reports. Evaluation of the scope of the monitoring and testing program will be ongoing. Once it appears that enough data has been generated, the ACHCSA will be petitioned to cease monitoring a specific well, to reduce the list of contaminants of concern for a specific well, and/or to reduce the frequency of monitoring of a specific well. Petitioning will be included in the letter reports.

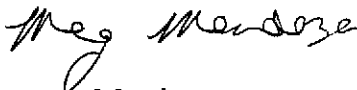
Mr. Barney Chan
Alameda County Health Care Services Agency
August 5, 1998
SCI 133.009
Page 5

SCHEDULE

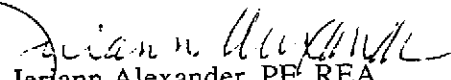
The Port of Oakland awaits your favorable review of this plan and is ready to implement the proposed scope as soon as it is approved. Please contact either of the undersigned with any questions you may have.

Yours very truly,

Subsurface Consultants, Inc.



Margaret Mendoza
Project Geologist



Jeriann Alexander, PE, REA
Project Manager

MM:JNA:ly 133.009\gwwkplan.doc

Attachments: Table 1 Proposed Groundwater Monitoring Plan
Plate 1 Proposed Monitoring Plan, First Quarter - Annual Event
Plate 2 Proposed Monitoring Plan, Second Quarter - Quarterly Event
Plate 3 Proposed Monitoring Plan, Third Quarter - Semi-Annual Event
Plate 4 Proposed Monitoring Plan, Fourth Quarter - Quarterly Event

cc: Michele Heffes, Esq. Port Attorney
Dale Klettke, Port Environmental Scientist
Jonathan Redding, Esq., Fitzgerald, Abbott & Beardsley
Diane Mims, Versar Inc.
Anne-Marie Collins, Zurich American Insurance Group

Table 1
Proposed Groundwater Monitoring Plan
Ninth Avenue Terminal, Port of Oakland
July 1998

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	Oil & Grease (SMWW 5520)	VOCs (EPA 8260/8240 list)	SVOCs (EPA 8270; Not Filtered)	SVOCs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
MW-1		A														Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-2		A														Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-3		A														Q		Concentrations are well documented and relatively stabilized; Concentrations are consistently less than nearby wells MW-4 and MW-6
MW-4	A	A														Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-5	SA	SA														Q		Situated near monitoring wells MW-4 and MW-6; Concentrations are well documented and relatively stabilized;
MW-6	A	A														Q	Q	Collect groundwater sample only if no Free Product (FP) is present; Concentrations are well documented and relatively stabilized; Change FP removal from monthly to quarterly due to lack of FP detected
MW-7																Q		TEH concentrations are well documented and relatively stabilized; TVH & BTEX are non-detect for 8 sampling events

Table 1
Proposed Groundwater Monitoring Plan
Ninth Avenue Terminal, Port of Oakland
July 1998

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	Oil & Grease (SMWW 5520)	VOCs (EPA 8260/8240 list)	SVOCs (EPA 8270; Not Filtered)	SVOCs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-1		A														Q		Embarcadero perimeter well; Concentrations are well documented and relatively
SCIMW-2		Q			Q	Q			Q	Q	Q	Q	Q	Q	Q	Q		Perimeter well; Monitor heavy metals for 1 year, if none at high concentrations- switch to monitoring for lead only; located downgradient of lead-impacted soils
SCIMW-3		A	A			A										Q		Concentrations are well documented and relatively stabilized
SCIMW-4		A														Q		Embarcadero perimeter well; TEH detected at relatively low concentrations
SCIMW-5		Q														Q		Shoreline perimeter well; Downgradient of TPH-impacted soil and groundwater
SCIMW-6		Q	Q		Q	Q	Q		Q		Q	Q	Q	Q	Q	Q		Shoreline perimeter well; downgradient of diesel impacted former utility lines; down/cross-gradient of former fertilizer
SCIMW-7		A	A	SA			SA									Q		Known VOC impact; localized
SCIMW-8		A	A			A										Q		Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-9		A	A			A										Q		TEH detected in 2 (of 2) events
SCIMW-10		A	A													Q		TEH detected in 2 (of 2) events
SCIMW-11	Q	Q	Q		Q	Q			Q		Q	Q	Q	Q	Q	Q		Shoreline perimeter well; downgradient of Benzene/TPH-impacted soils; cross gradient of PNA-impacted soils
SCIMW-12		Q									Q	Q	Q	Q	Q	Q		Shoreline perimeter well; Currently ND for TPH
SCIMW-13		A	A			A										Q		TEH detected in 2 (of 2) events
SCIMW-14		SA	SA		A	A					Q	Q	Q	Q	Q	Q		Bulkhead perimeter well; FP in adjacent boring SCI-2; TEH detected in 2 (of 2)

Table 1
Proposed Groundwater Monitoring Plan
Ninth Avenue Terminal, Port of Oakland
July 1998

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	Oil & Grease (SMWW 5520)	VOCs (EPA 8260/8240 list)	SVOCs (EPA 8270; Not Filtered)	SVOCs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/150.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-15		SA	SA			A										Q		Bulkhead perimeter well; TEH detected in 2 (of 2) events
SCIMW-16		A														Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)
SCIMW-17		A														Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)
SCIMW-18		A														Q		TEH detected in 2 (of 2) events; Adjacent to storm drain
SCIMW-19		A														Q		Bulkhead perimeter well; Low concentrations of TEH detected in 2 (of 2)
SCIMW-20		A								A						Q		Ninth Avenue perimeter well; Low concentrations of TEH detected in 2 (of 2) events; downgradient of lead-impacted soil and groundwater
SCIMW-21		A									A					Q		In area of caustic soil; TEH impacts
SCIMW-22		A		SA												Q		Located outside of VOC plume; currently ND for VOCs
SCIMW-23		Q	Q				Q (2 qtrs; re-eval.)				Q	Q	Q	Q	Q	Q		Shoreline perimeter well; Located in former fertilizer plant area; Pesticides currently ND (except for 1 hit of 0.05 ppb Heptachlor B)
SCIMW-24	Q	Q	Q			SA				Q	Q	Q	Q	Q	Q	Q		Adjacent to former cardlock tank; benzene/TPH-impacted groundwater
SCIMW-25																Q		Exterior location; No significant impact
SCIMW-26		A														Q		Located near 1992 diesel release area; low concentration of TEH detected in one event
SCIMW-27		A														Q		Adjacent to Cannery USTs; Relatively low TEH concentrations
SCIMW-28		A				A		A	SA							Q		Downgradient of Pb/PCB-impacted soil; downgradient of metals/PNA-impacted area

Table 1
Proposed Groundwater Monitoring Plan
Ninth Avenue Terminal, Port of Oakland
July 1998

Monitoring Well ID	TVH/BTEX (EPA 8015m/8020)	TEHd, mo (8015m; w/ silica gel clean-up)	Oil & Grease (SMWW 5520)	VOCs (EPA 8260/8240 list)	SVOCs (EPA 8270; Not Filtered)	SVOCs (EPA 8270; Filtered)	Pesticides (EPA 8080)	PCBs (EPA 8080)	Heavy Metals Filtered (EPA 6010/7000; Filtered)	Lead (EPA 6010/7000; Filtered)	pH (EPA 9040/9045/15C.1)	Eh	TDS (EPA 160.1)	Dissolved Organic Carbon (EPA 9060)	Dissolved Oxygen	Water Levels	Free Product Removal	Rationale:
SCIMW-29																Q		Adjacent to former plating sumps; No apparent impact
SCIMW-30		A		SA												Q		Monitor lateral extent of VOC plume
SCIMW-31D				SA												Q		Monitor vertical extent of VOC plume; Quarterly frequency for the first year, then semiannual; currently ND
SCIMW-32		A		SA												Q		Monitor lateral extent of VOC plume
SCIMW-33		A	A	SA		A	A									Q		Monitor lateral extent of VOC plume; Pesticides in soil; PNAs in nearby boring (RMA-22@7')
SCIMW-34	Q	Q	Q		Q	Q				Q	Q	Q	Q	Q	Q	Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw
SCIMW-35		Q														Q		Shoreline perimeter well; Near former UST area; Soil has PNAs, PCBs, Benzene, Pb at depth; SCI-76 had BTEX in grab gw

Notes:

- Q = Quarterly - conducted each quarter
- SA = Semi-Annually - conducted during the first and third quarterly events
- A = Annually - conducted during the first quarter only
- TVH = Total Volatile Hydrocarbons
- BTEX = Benzene, Toluene, Ethylbenzene and total Xylenes
- TEH = Total Extractable Hydrocarbons
- VOCs = Volatile Organic Compounds
- SVOCs = Semi-Volatile Organic Compounds
- PCBs = Polychlorinated Biphenyls
- TDS = Total Dissolved Solids

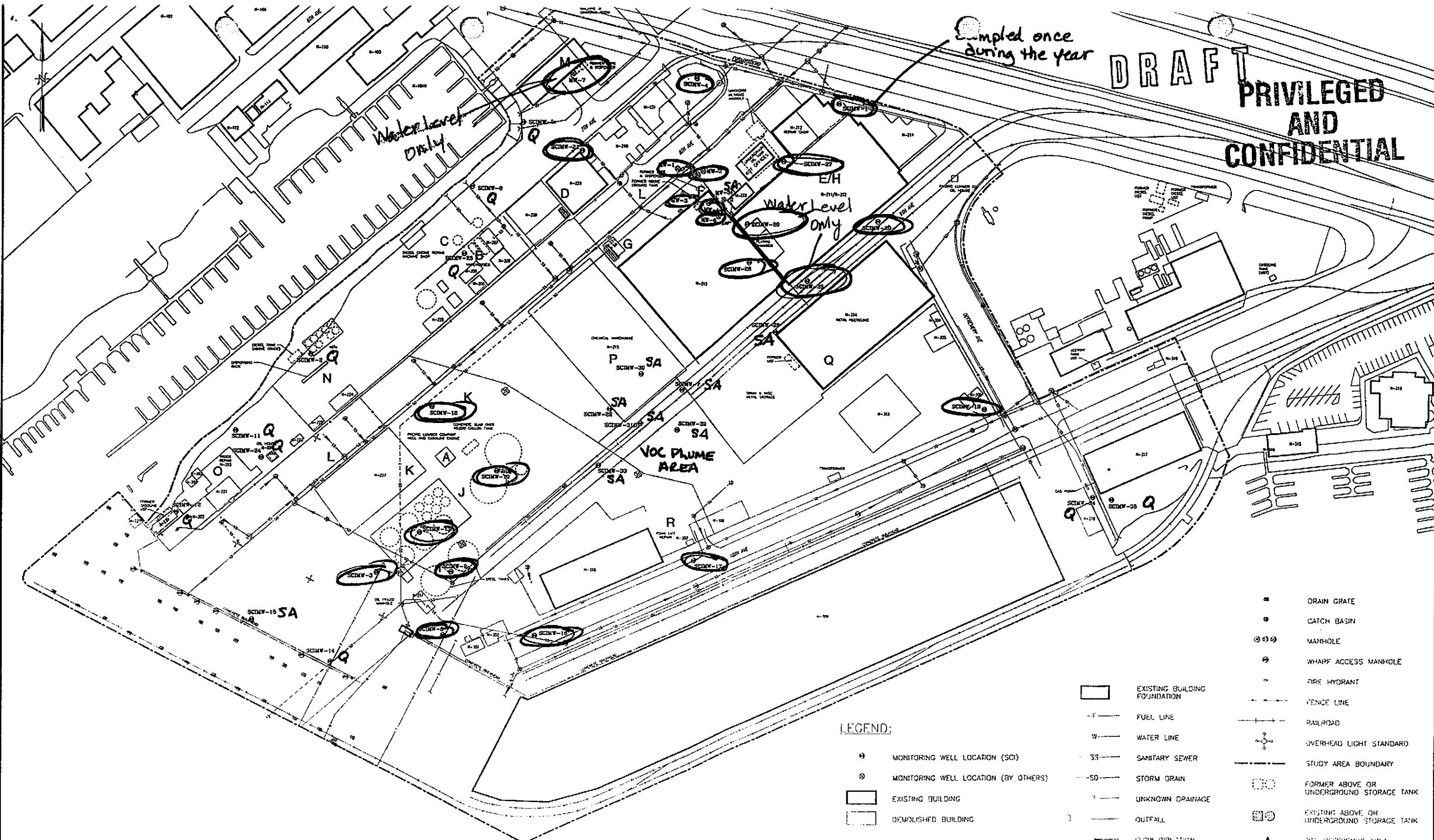
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PRIVILEGED AND CONFIDENTIAL

Sampled once during the year

Water Level Only

Water Level Only

VOC PLUME AREA

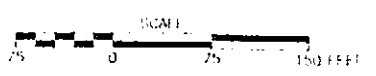


LEGEND:

- ⊕ MONITORING WELL LOCATION (SCI)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- F— FUEL LINE
- W— WATER LINE
- SS— SANITARY SEWER
- SD— STORM DRAIN
- ?— UNKNOWN DRAINAGE
- O— OUTFALL
- FLOW DIRECTION
- DRAIN GRATE
- ⊙ CATCH BASIN
- ⊙⊙ MANHOLE
- ⊕ WHARF ACCESS MANHOLE
- ⊕ FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ⊕ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊕ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA

NOTES:
 1. MONITORING POINTS WERE SAMPLED BY WEST 11/22/94

REFERENCE DRAWING:
 BASE MAP BY PORT OF OAKLAND
 DATE 3-22-96



DESIGNED BY
 DRAWN BY
 CHECKED BY
 APPROVED BY
 DATE



Subsurface Consultants, Inc.
 Geotechnical & Environmental Engineers
 171 12th Street - Suite 200
 Oakland, California 94607
 (510) 299-7960
 FAX (510) 299-7970

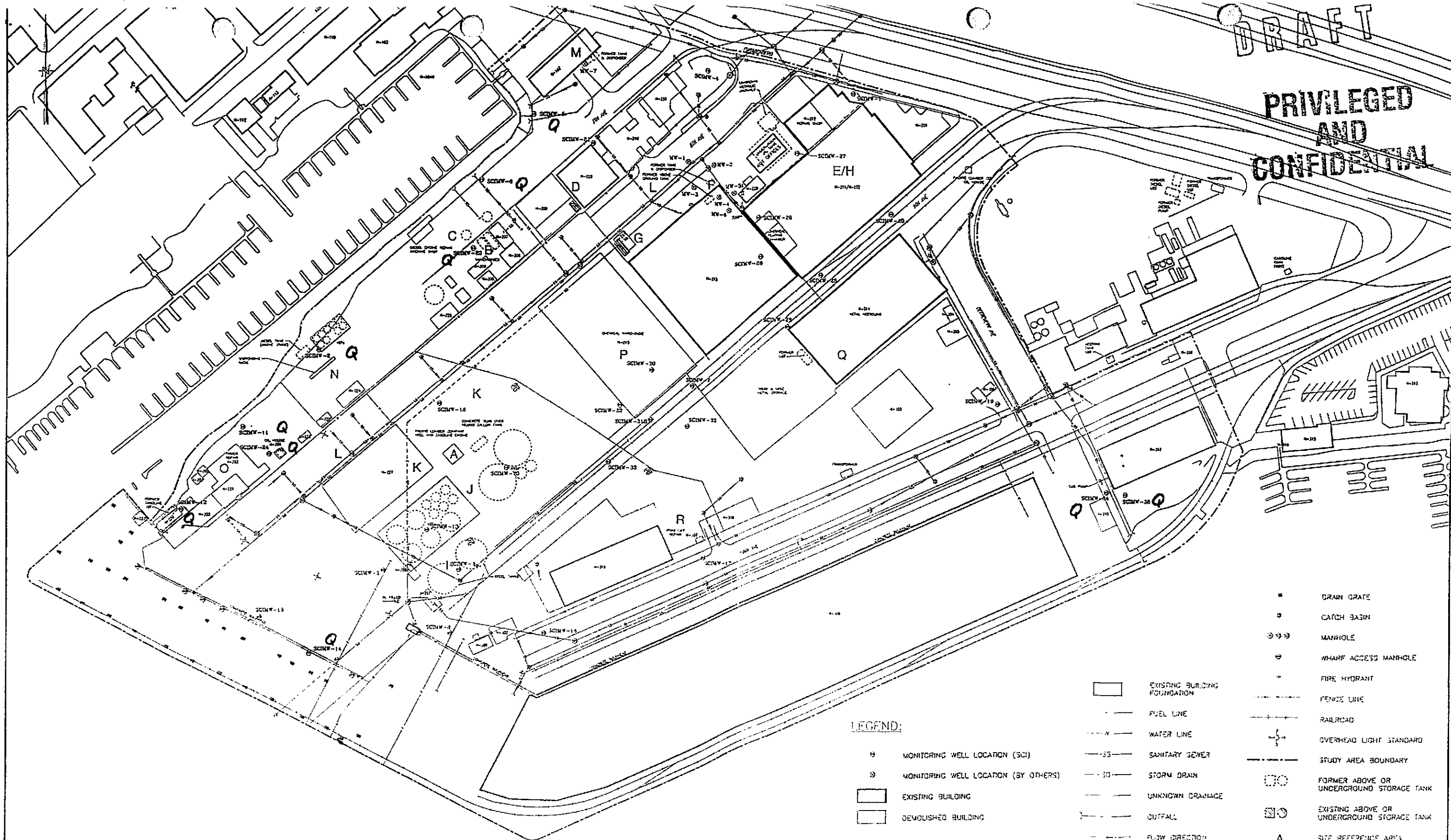
NINTH AVENUE TERMINAL
 PORT OF OAKLAND

**PROPOSED MONITORING PLAN
 FIRST QUARTER - ANNUAL EVENT**

SCALE
 AS SHOWN
 PROJECT NO.
 133-000
 SHEET NO.
1 OF

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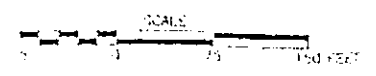


LEGEND:

- ⊕ MONITORING WELL LOCATION (SCI)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- FUEL LINE
- WATER LINE
- SS— SANITARY SEWER
- SD— STORM DRAIN
- UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- DRAIN GRAFE
- ⊙ CATCH BASIN
- ⊙ MANHOLE
- ⊙ WHARF ACCESS MANHOLE
- ⊙ FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ⊙ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊙ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA

NOTES:
 1. UTILITY SURVEY WAS PREPARED BY
 AN WEST 5-22-15

REFERENCE DRAWING:
 BASE MAP BY
 PORT OF OAKLAND
 DATED 2-22-15



DESIGNED BY
 ROP/DP
 CHECKED BY
 JLR
 APPROVED BY
 JLR
 DATE
 5-1-15



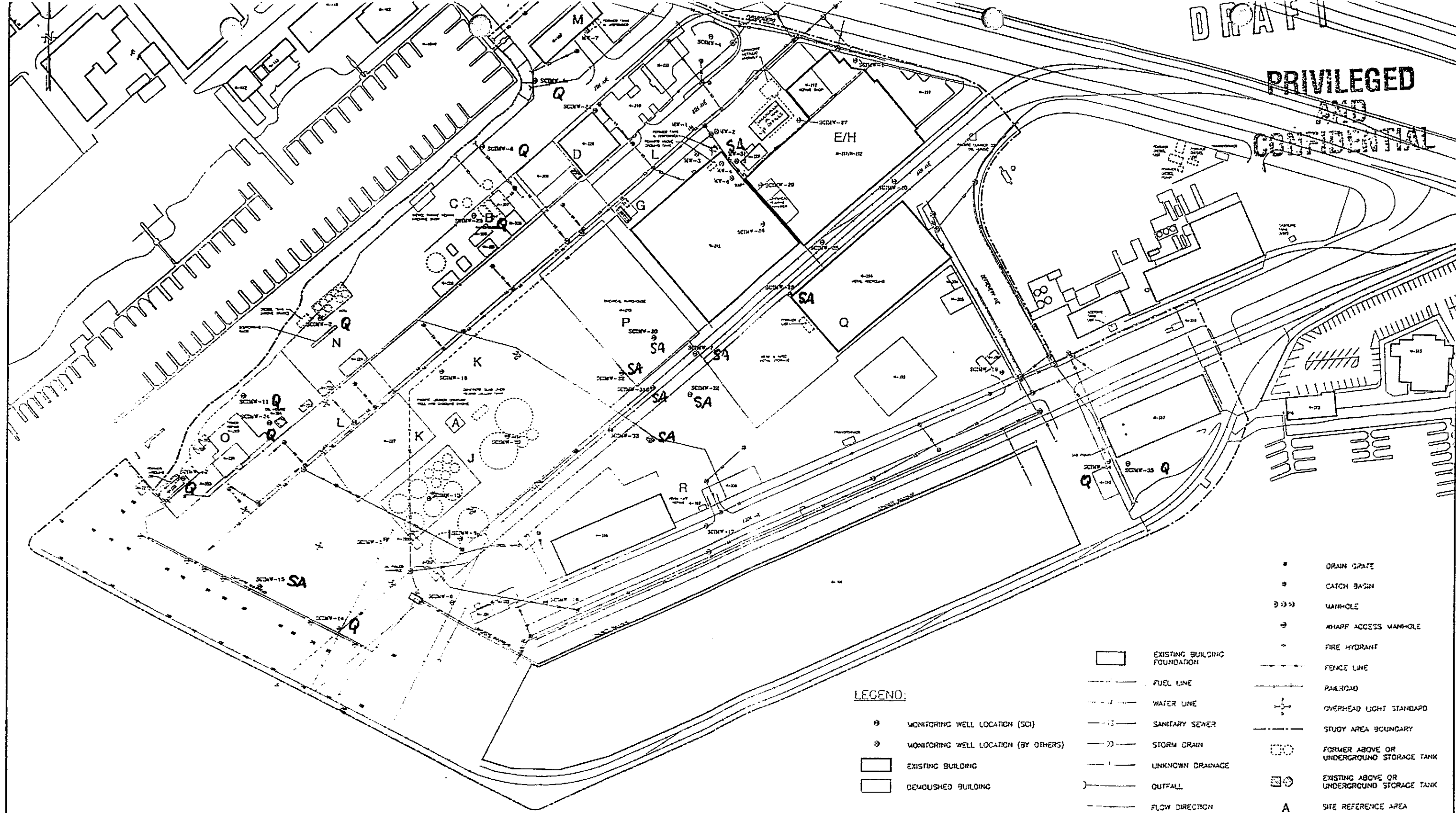
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 Fax (510) 291-7173

NORTH AVENUE TERMINAL
 PORT OF OAKLAND

PROPOSED MONITORING PLAN
 SECOND QUARTER - QUARTERLY EVENT

SCALE AS SHOWN
 PROJECT NO.
 133.009
 SHEET NO.
 2

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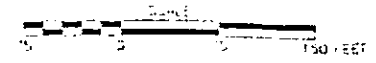


LEGEND:

- ⊕ MONITORING WELL LOCATION (SCI)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- ▭ EXISTING BUILDING FOUNDATION
- FUEL LINE
- WATER LINE
- SANITARY SEWER
- STORM DRAIN
- UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- DRAIN GRAFE
- ⊕ CATCH BASIN
- ⊕ MANHOLE
- ⊕ WHARF ACCESS MANHOLE
- ⊕ FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ⊕ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊕ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA

NOTES
 1. UTILITY SURVEY WAS PREPARED BY
 MW REED & ASSOCIATES

DATE MAP BY
 PORT OF OAKLAND
 DATED 5-22-94



DRAWN BY
 J.P.
 CHECKED BY
 J.P.
 APPROVED BY
 J.P.
 DATE
 5-5-94



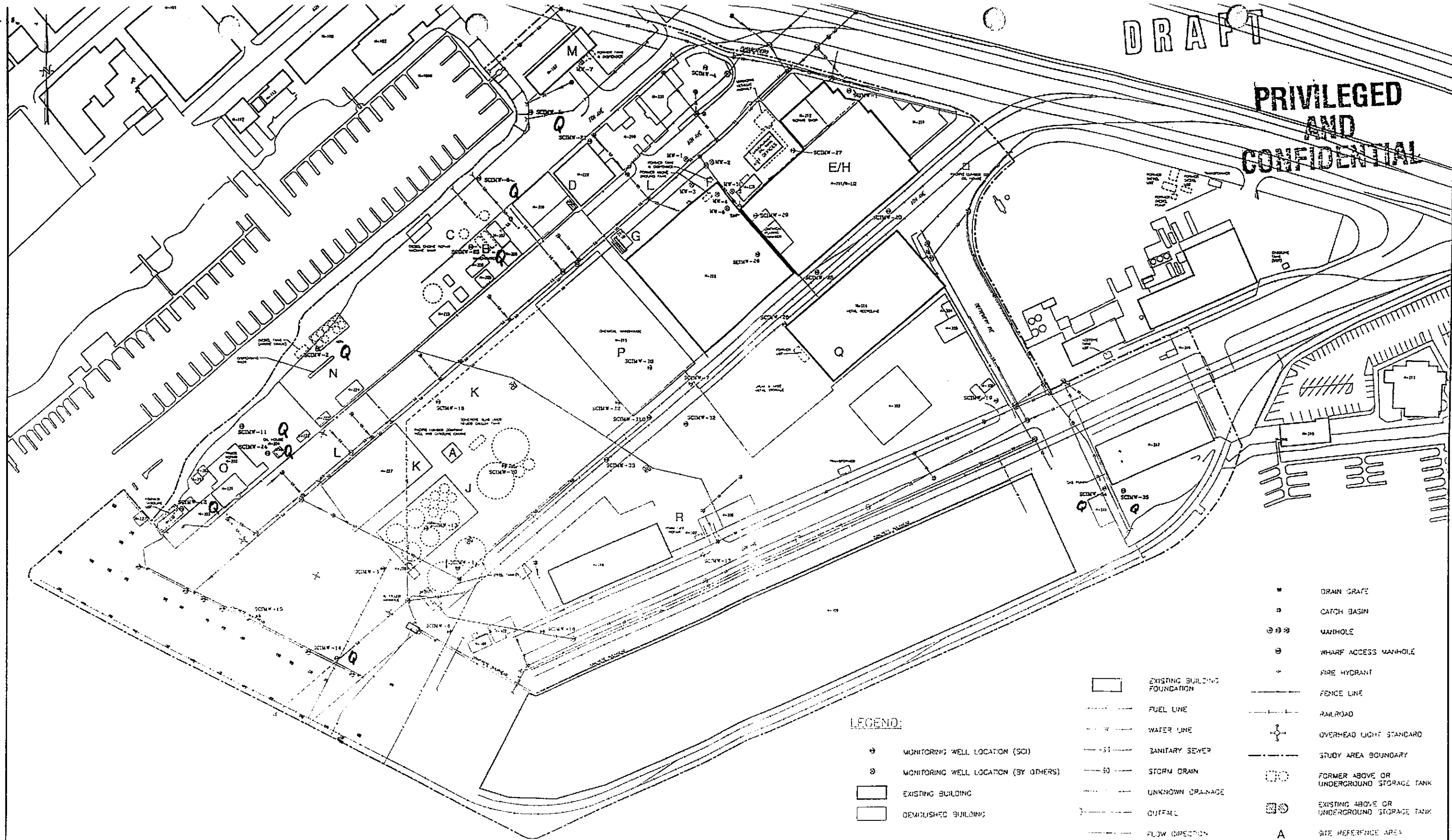
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 Fax (510) 299-7975

NINTH AVENUE TERMINAL
 PORT OF OAKLAND
PROPOSED MONITORING PLAN
THIRD QUARTER - SEMI-ANNUAL EVENT

SCALE
 AS SHOWN
 PROJECT NO.
 153,000
 SHEET NO.
3

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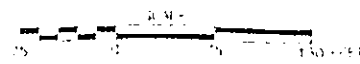


LEGEND:

- ⊕ MONITORING WELL LOCATION (SCI)
- ⊙ MONITORING WELL LOCATION (BY OTHERS)
- ▭ EXISTING BUILDING
- ▭ DEMOLISHED BUILDING
- ▭ EXISTING BUILDING FOUNDATION
- FUEL LINE
- WATER LINE
- SANITARY SEWER
- STORM DRAIN
- UNKNOWN DRAINAGE
- OUTFALL
- FLOW DIRECTION
- DRAIN GRAFE
- ⊕ CATCH BASIN
- ⊕ MANHOLE
- ⊕ WHARF ACCESS MANHOLE
- ⊕ FIRE HYDRANT
- FENCE LINE
- RAILROAD
- ⊕ OVERHEAD LIGHT STANDARD
- STUDY AREA BOUNDARY
- ⊕ FORMER ABOVE OR UNDERGROUND STORAGE TANK
- ⊕ EXISTING ABOVE OR UNDERGROUND STORAGE TANK
- A SITE REFERENCE AREA

NOTES:
 1. STUDY DUCTILE WAS PREPARED BY
 MR. WEST 5-22-14

REFERENCE DRAWINGS:
 BASE MAP BY
 POINT OF OAKLAND
 DATED 3-22-14



SECTION 1
BY
DATE
PROJECT NO.
DATE
DATE
DATE
DATE



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 Geotechnical & Environmental Engineers

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NINTH AVENUE TERMINAL
 PART OF OAKLAND

PROPOSED MONITORING PLAN
FOURTH QUARTER - QUARTERLY EVENT

SCALE
AS SHOWN
PROJECT NO.
133 009
SHEET NO.
4



MEMORANDUM

To: Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Date: September 16, 1998

Project: 133.009

Number:

From: Meg Mendoza, Jeriann Alexander

Subject: Discussion of Work Plan for the Groundwater Monitoring Program

This memorandum is sent at your request, to reflect your questions pertaining to the Groundwater Monitoring Program for the Ninth Avenue Terminal site and our responses given during our phone conversations on September 11 and 14, 1998. The discussions focused on the details of the plan outlined in SCI's Work Plan, dated August 5, 1998. With the clarifications given, it is SCI's understanding that the scope of the plan is appropriate and is approved by the ACHCSA. As synopsis of the items which required clarification are described below.

1. The work plan includes testing both filtered and unfiltered groundwater samples for SVOC's. As discussed, these tests were proposed to provide adequate data for the future risk evaluation. It is thought that SVOC's adhere to soil particles. Hence, comparing the results of these tests will provide confirmation that the SVOC's are bound and will not be transmitted through groundwater. Upon the review of the data from two consecutive sampling events, it is believed that the unfiltered test will be dropped.
2. The plan includes testing some samples for both Total Extractable Hydrocarbons (TEH) as motor oil, and Oil & Grease (O&G). As discussed, the O&G tests were proposed in areas where heavier weight hydrocarbons may exist. Given the other types of analysis being proposed for these areas, it is understood that the TEH scans themselves will provide the toxicity data which is required. Hence, the O&G analysis will be dropped from the program.

MEMORANDUM

Page 2

3. At your request, due to high concentrations of petroleum hydrocarbons previously detected in well MW-6 in the KOT release area, the monitoring frequency for this well will be increased from annually to semi-annually. It is SCI's understanding that if free product is detected the samples will not be submitted for analysis.
4. The plan proposes that heavy metals will be monitored in well SCIMW-2 for one year and if none occur at high concentrations, continued monitoring will check for the presence of lead only. "High" concentrations are those concentrations which exceed levels which are known to be protective of salt water aquatic species.
5. The ACHCSA will consider the H-107 underground tank site (LOP STID # 3335) for closure. To this end, the ACHCSA will prepare a separate letter which addresses the closure issue.
6. Existing LOP sites at the Ninth Avenue Terminal will continue to be investigated by the Port of Oakland through the groundwater monitoring program. To attain future closure of these site, additional investigation may be required by the ACHCSA. These sites include STID # 3335 (KOT underground tank near H-213), STID # 5067 (101 Tenth Avenue, MTC site); STID # 225 (845 Embarcadero, H211); STID # 6894 (79 Eighth Avenue, Card Lock Building H 204); and STID # 6895 (271 Eighth Avenue, H-209).
7. As requested future correspondence will also be sent to Mr. Leroy Griffin of the City of Oakland Fire Department, since the City of Oakland now has jurisdiction under the CUPA program, with regard to existing or former underground tank locations not currently a part of the ACHCSA LOP Program. Suspected tank areas which do not have an LOP number include the MTC fueling facility proposed for construction in 1975 following the removal of the facility at H-317 (the new location, if any, has not been identified to date), the H-227 yard tank (significant impacts have not been encountered in this tank site) and the H-314 Kalman/Lakeside tank (limited investigation has not identified the tank location).

MEMORANDUM

Page 3

SCI understands that the ACHCSA will prepare an approval letter for the groundwater program upon receiving this memorandum. SCI anticipates beginning the Annual Event on Thursday, September 17, 1998.

If you have any questions please call Jeriann Alexander at (925) 299-7960.

MM:JNA_bchan998.doc

cc: Michele Heffes, Esq., Port Attorney
Dale Klettke, Port Environmental Scientist
Jonathan Redding, Esq., Fitzgerald, Abbott & Beardsley LLP
Anne-Marie Collins, Zurich American Insurance Group
Jamie Tull, JSA Environmental
Leroy Griffin, City of Oakland Fire Department

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



September 18, 1998

Ms. Michele Heffes, Esq.
Port of Oakland Legal Department
530 Water St.
P.O. Box 2064
Oakland CA 94607-2064

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

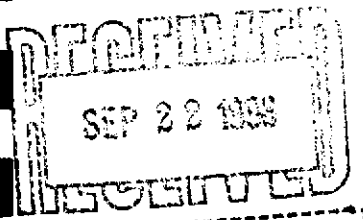
**Re: Work Plan, Groundwater Monitoring Program, Ninth Avenue Terminal Site,
Oakland CA**

Dear Ms. Heffes:

I have received and reviewed the August 5, 1998 work plan referenced above as provided by your consultants, Subsurface Consultants, Inc. (SCI). I have discussed its contents with Ms. Meg Mendoza and Ms. Jeriann Alexander and Ms. Diane Mims formerly of Versar, Inc. Based upon our discussions, a September 16, 1998 Memorandum was prepared by SCI which summarized the items discussed and resolved through conversation with the above individuals. Our office concurs with the seven (7) items mentioned in this memorandum.

Our office would also like to comment on the following items:

- Our office disagrees with the "rationale" that the groundwater concentrations in MW-6 are "relatively stabilized". This is why our office recommended more frequent monitoring and agreed with semi-annual instead of annual monitoring.
- The potential closure of LOP site #3335, the KOT underground tank near H-107, will be based upon the recommended acceptable TPH levels within the newly revised SFIA study. I understand that this revised order may be available soon.
- The rationale for quarterly groundwater monitoring was based on either a well being a perimeter well and analyte selection was at times based upon the presence of a specific analyte in grab groundwater samples from borings near the respective monitoring well. An exception is made for the perimeter wells near the bulkhead where migration is impeded and assumed to be significantly less.
- Although the parameters, pH and Eh, were not noted in the plan for some of the monitoring wells, it was acknowledged that these parameters will be tested in the field for all wells and will appear, at minimum, on the groundwater sampling sheets.
- Care should be taken when referring to the terms "relatively low" concentrations. Because there are inland and shoreline wells, what is considered low in one case may not be low in the other.
- For monitoring well SCIMW-31D, it was noted that in the rationale section, "quarterly for the first year" was in error since semi-annual monitoring was proposed.



Ms. M. Heffes- Port of Oakland
9th Ave. Terminal
September 18, 1998
Page 2.

I understand that this monitoring plan is to be implemented immediately. Please submit a copy of this report within 60 days of the completion of this field work.

Please consider this a formal request for technical reports, pursuant to the Water Code Section 13267 (b) and the Health and Safety Code Sections 25299.37 and 25299.78. The failure to submit the requested document may subject the Port of Oakland to civil liabilities.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,



Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, files

Mr. D. Klettke, Port of Oakland, P.O. Box 2064, Oakland CA 94607-2064

Mr. J. Alexander, SCI, 3736 Mt. Diablo Blvd., Suite 200, Lafayette, CA 94549

Mr. J. Redding, Fitzgerald, Abbott & Beardsley LLP, 1221 Broadway, 21st Floor, P.O. Box
12867, Oakland CA 94604-2867

Mr. D. Lee, RWQCB, 1515 Clay St., Ste. 1400, Oakland CA 94612

Mr. Robert Chambers, Alameda County District Attorney Office

Mr. L. Griffin, City of Oakland Fire Department, OES, 505 14th St., 7th Floor, Oakland 94612

GROUNDWATER DEPTHS

Project Name: K.O.T. / 9th Ave.

Job No.: 133.009

Measured by: DWA/K.J.

Well	Date	Time	Groundwater Depth (feet)	Comments
MW-1	9/17/98	1045	5.31	
MW-2		1040	5.03	
MW-3		1035	4.35	4.35
MW-4		1045 1045	4' 5 7/16"	Top of Product = 4' 5 1/2" product thickness = 1/16" 1/4" in skimmer product bailed - insignificant
MW-5		1055	5.44	
MW-6		1315	5' 2 7/8"	Top of Product = 4' 10 1/8" product thickness = 4" 1" in skimmer product bailed = 1 liter
MW-7		0945	3.75	
SCIMW-1		1105	5.35	
SCIMW-2		1000	5.85	new cap/lock new cap/lock
SCIMW-3		1035	7.58	new cap/lock
SCIMW-4		0940	3.83	
SCIMW-5		0950	4.41	
SCIMW-6		0955	6.17	new cap/lock
SCIMW-7		1045	6.52	
SCIMW-8		1020	5.56	
SCIMW-9		0945	4.68	
SCIMW-10		1015	4.92	
SCIMW-11	*	1150	4.77	* inaccessible on 9/17/98 - measured 9/22/98
SCIMW-12		0905	6.80	
SCIMW-13		1010	5.14	
SCIMW-14		0925	8.16	
SCIMW-15		0915	8.28	
SCIMW-16		1115	3.36	new cap
SCIMW-17		1125	3.20	
SCIMW-18		1005	3.58	
SCIMW-19		1105	4.08	
SCIMW-20	✓	1135	2.32	

**GROUNDWATER DEPTHS
PLUS D.O./EH READINGS**

Project Name: 9th Ave Terminal

Job No.: 133.009

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Before Purge		▼ level Comments	After Purge	
				D.O. (ppm)	Re-Dox (EH)		D.O. (ppm)	Re-Dox (EH)
MW-1	9/25/98	0915	7.28			▼ level not static	.23	-160
MW-2	9/25/98	1355	5.68	.12	-53	▼ static	.50	-88
MW-3	9/28/98	1300	7.23			▼ level not static	.18	-158
MW-4	Not Measured							
MW-5	9/25/98	1330	5.46	.11	-71	▼ static	.42	-27
MW-6	Not Measured							
MW-7	Not Measured							
SCIMW-1	9/28/98	0905	5.70	.26	-129	▼ static	.32	-138
SCIMW-2	9/25/98	1150	6.19	.11	43	▼ static	.29	-79
SCIMW-3	9/28/98	1145	5.28	.11	-154	▼ static	.19	-143
SCIMW-4	9/25/98	0940	3.91	.23	-127	static ▼	.31	-112
SCIMW-5	9/25/98	1105	6.48			▼ level not	1.4	256
SCIMW-6	9/25/98	1120	6.67	4.1	270	▼ level not static	.80	76
SCIMW-7	9/28/98	1545	7.01	.10	-155	▼ static	.36	-153
SCIMW-8		1130	5.70	.15	-146	▼ static	.19	-143
SCIMW-9		1350	4.82	.15	-127	▼ static	.30	-153
SCIMW-10		1430	5.56	.08	-257	▼ static	.10	-258
SCIMW-11		1305	5.61	.19	-158	▼ static	.20	-153
SCIMW-12		1245	7.21	4.19	25	▼ static	2.70	110
SCIMW-13		1405	4.34	.10	-280	▼ static	.10	-291
SCIMW-14		1210	8.34	.18	-116	▼ static	.25	-142
SCIMW-15		1230	8.49	.13	-147	▼ static	.19	-159
SCIMW-16		1105	3.88	.11	-160	▼ static	.23	-153
SCIMW-17		1040	3.28	.14	-122	▼ static	.41	-96
SCIMW-18	9/24/98	1245	5.00			▼ level not static	.14	-88
SCIMW-19	9/29/98	1330	4.39	.14	-138	▼ static	.37	-117
SCIMW-20	9/28/98	0935	2.86	.16	-86	▼ static	.51	-71

GROUNDWATER DEPTHS

Project Name: _____

Job No.: 133.009

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Before Purge			After Purge	
				D.O. ppm mg/L	Re-DoX (EH)	Comments	D.O. ppm	Re-DoX (EH)
SCIMW-21	9/25/98	1015	2.21	.18	228	static ▼	.41	-56
SCIMW-22	9/25/98	1220	4.18	.15	-138	static ▼	.12	-133
SCIMW-23	9/24/98	1230	4.37			▼ level not static	.22	-17
SCIMW-24	9/28/98	1325	4.89	.13	-158	▼ static	.16	-142
SCIMW-25	Not Measured							
SCIMW-26	9/25/98	1315	4.18	.11	-94	static ▼	.22	-100
SCIMW-27	9/25/98	1415	4.92	.11	-52	static ▼	.88	-58
SCIMW-28	9/25/98	0830	6.97			▼ level not static	.32	125
SCIMW-29	Not Measured							
SCIMW-30	9/25/98	1250	4.68	.12	-132	static ▼	.12	-140
SCIMW-31D	9/28/98	1515	7.83	.18	-20	▼ static	.63	21
SCIMW-32	↓	1605	5.09	.09	-101	▼ static	1.0	-66
SCIMW-33	↓	1455	4.43	.09	-194	▼ static	.17	-159
SCIMW-34	9/24/98	1100	7.88			▼ level not static	2.76	179mv
SCIMW-35	9/28/98	1005	5.65	3.04	125	▼ static	2.96	14

* Purged 1 volume

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: MW-1
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 15.00 feet
 Depth to Groundwater Before Purging (below TOC) 5.31 feet
 Feet of Water in Well 9.69 feet
 Depth to Groundwater When 80% Recovered 7.25 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.6 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge (overnight)

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.83</u>	<u>22.0</u>	<u>19,000</u>		<u>semi-clear / rotten egg odor some particulates</u>
<u>2</u>		<u>6.77</u>	<u>20.5</u>	<u>25,500</u>		<u>mucky</u>
<u>3</u>		<u>6.82</u>	<u>20.5</u>	<u>27,000</u>		
<u>4</u>		<u>6.85</u>	<u>20.0</u>	<u>27,000</u>		<u>dry @ 4 gals.</u>
<u>5</u>						

Total Gallons Purged 4 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.28 on 9/25/98 @ 0915 feet
 Sampling Method disposable bailer
 Containers Used 1 40 ml 1 liter 0 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: MW-2
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 15.00 feet
 Depth to Groundwater Before Purging (below TOC) 5.03 feet
 Feet of Water in Well 9.97 feet
 Depth to Groundwater When 80% Recovered 7.02 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.6 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.61</u>	<u>22.0</u>	<u>13000</u>		<u>lt. greenish-gray, clean sheen, strong odor</u>
<u>2</u>		<u>6.64</u>	<u>21.0</u>	<u>15500</u>		<u>same, dark green</u>
<u>3</u>		<u>6.74</u>	<u>20.5</u>	<u>19500</u>		<u>dk gray, same</u>
<u>4</u>						<u>*well dry at 3.5 gallons</u>
<u>5</u>						

Total Gallons Purged 3.5 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.22' on 9/23/98 @ 0815 feet
 Sampling Method disposable bailer
 Containers Used _____
 40 ml liter pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: K.O.T. / 9th Ave. Well Number: MW-3
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/17/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.50 feet
 Depth to Groundwater Before Purging (below TOC) 4.35 feet
 Feet of Water in Well 15.15 feet
 Depth to Groundwater When 80% Recovered 7.38 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

very slow recharge

Gallons Removed	Time	pH	Temp (C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		7.08	20.5	18,500		<i>clear/faint odor w/ some particulates</i>
3		7.01	19.5	24,500		<i>clear/faint odor w/ some particulates</i>
5		7.51	19.5	22,000		<i>went dry @ 5 gallons</i>
7						

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.23 on 9/29/98 @ 1300 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

11-14

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: MW-5
 Job No.: 133,009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: Foggy

Depth to Casing Bottom (below TOC) 19.50 feet
 Depth to Groundwater Before Purging (below TOC) 5.44 feet
 Feet of Water in Well 14.06 feet
 Depth to Groundwater When 80% Recovered 8.25 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

*slow recharge
(overnight)*

Gallons Removed	Time	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.50	22.5	3956		clear/slight odor
3		6.46	21.5	6750		
5		6.48	21.0	12,500		
7		6.59	20.5	16,500		
9		6.75	29.5	20,756		murky

w/ spotty sheen

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 5.62' on 9/23/98 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: K.O.T. / 9th Ave. Well Number: SC1 MW1
 Job No.: 133009 Well Casing Diameter: 2 inches
 Sampled By: DWT Date: 9/22/98
 TOC Elevation: _____ Weather: Foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 5.35 feet
 Feet of Water in Well 12.65 feet
 Depth to Groundwater When 80% Recovered 7.88 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>	_____	<u>6.64</u>	<u>19.0</u>	<u>12,750</u>	_____	<u>clear/water w/ visible black particles</u>
<u>3</u>	_____	<u>6.81</u>	<u>18.5</u>	<u>15,500</u>	_____	<u>increasing particulates</u>
<u>5</u>	_____	<u>6.91</u>	<u>18.0</u>	<u>19,750</u>	_____	_____
<u>7</u>	_____	<u>6.98</u>	<u>18.0</u>	<u>24,000</u>	_____	_____
<u>9</u>	_____	<u>6.99</u>	<u>17.5</u>	<u>27,000</u>	_____	_____

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.40 feet
 Sampling Method disposable bailer
 Containers Used _____
 1
 litter pint

WELL SAMPLING FORM

Project Name: K.O.T. / 9th Ave. Well Number: SCIMW-2
 Job No.: 183.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet
 Depth to Groundwater Before Purging (below TOC) 5.85 feet
 Feet of Water in Well 12.65 feet
 Depth to Groundwater When 80% Recovered 8.38 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.0 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

immediate recharge

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	DO = 1.5 ppm Salinity %	Comments
0		7.10	19.5	18000		slight odor, few large particles
2		7.03	21.5	19500		clear, streaky sheen
4		7.02	22.5	16000		med. brown, murky, streaky sheen, odor
6		7.13	22.5	17,000		Same as above
						Same

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.65 feet
 Sampling Method disposable bailer
 Containers Used 6 40 ml 2 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: K.O.T. / 9th Ave. Well Number: Sci MW-3
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 7.58 feet
 Feet of Water in Well 10.42 feet
 Depth to Groundwater When 80% Recovered 9.66 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.7 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>		<u>6.86</u>	<u>23.0</u>	<u>21,500</u>		<i>green It is clear, some particles, slight odor</i>
<u>2</u>		<u>6.79</u>	<u>24.5</u>	<u>11,000</u>		<i>dk. green, murky, lots of particles, v. slight odor</i>
<u>4</u>		<u>6.78</u>	<u>24.0</u>	<u>11,000</u>		<i>same as above</i>
<u>6</u>		<u>6.91</u>	<u>23.5</u>	<u>14,500</u>		<i>same</i>

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 9.60 feet
 Sampling Method disposable bailer
 Containers Used _____ 2 _____ liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SC1 MW-4
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 3.83 feet
 Feet of Water in Well 14.17 feet
 Depth to Groundwater When 80% Recovered 6.66 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable baiter

FIELD MEASUREMENTS

slow recharge (overnight)

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.77	23.0	7000		clear/no odor ^{w/ visible black particulates}
3		6.71	21.5	7500		↓
5		6.76	21.0	12,500		
7		6.77	20.5	17,250		
9		6.83	20.0	19,500		

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 3.98' feet
 Sampling Method disposable baiter
 Containers Used _____ 40 ml _____ liter _____ pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: K.O.T. / 9th Ave. Terminal Well Number: SC1MW-5
 Job No.: 133,009 Well Casing Diameter: 2 inches
 Sampled By: DWA/K.J. Date: 9/17/98
 TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.50 feet
 Depth to Groundwater Before Purging (below TOC) 4.41 feet
 Feet of Water in Well 14.09 feet
 Depth to Groundwater When 80% Recovered 7.23 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

very slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>		<u>6.82</u>	<u>23.0</u>	<u>32,500</u>		<u>clear, no odor</u>
<u>4</u>		<u>6.78</u>	<u>22.0</u>	<u>33,000</u>		<u>" "</u>
<u>6</u>		<u>6.77</u>	<u>21.0</u>	<u>30,000</u>		<u>clear, slight odor, some particles</u>
<u>8</u>		<u>6.75</u>	<u>20.0</u>	<u>32,000</u>		<u>" " " "</u>

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) ~~8.20~~ 7.48' feet
 Sampling Method disposable bailer
 Containers Used _____ liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SC1 MW-6
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/23/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.50 feet
 Depth to Groundwater Before Purging (below TOC) 6.17 feet
 Feet of Water in Well 13.33 feet
 Depth to Groundwater When 80% Recovered 8.84 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product None
 Purge Method disposable bailer

immediate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	D.O. = 6.2 ppm Salinity %	Comments
<u>1</u>		<u>6.88</u>	<u>20.5</u>	<u>29,250</u>		<u>semi-clear / no odor</u>
<u>3</u>		<u>6.90</u>	<u>20.0</u>	<u>28,000</u>		
<u>5</u>		<u>6.93</u>	<u>20.9</u>	<u>27,500</u>		
<u>7</u>		<u>6.99</u>	<u>20.0</u>	<u>22,500</u>		<u>increasing turbidity</u>
<u>9</u>		<u>7.02</u>	<u>20.0</u>	<u>20,000</u>		

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.21 feet
 Sampling Method disposable bailer
 Containers Used 6 40 ml 2 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: K.O.T. 19th Ave Well Number: SCMW-7
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/17/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 6.52 feet
 Feet of Water in Well 11.48 feet
 Depth to Groundwater When 80% Recovered 8.82 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

very slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.40	22.5	20,000		greenish tint (color) clear, slight odor, some particles
3		6.38	22.0	18,500		" " "
5		6.57	21.0	25500		" " "
7		6.78	20.5	29,000		dry @ 7 gals.

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) 9.3' feet
 Sampling Method disposable bailer
 Containers Used 4 40 ml 2 liter _____ pint

9.5
2750A
9.3

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JOB NUMBER

DATE

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PLATE

WELL SAMPLING FORM

Project Name: K.O.T. 19th Ave. Term. Well Number: 5C1 MW-8

Job No.: 133.009 Well Casing Diameter: 2 inches

Sampled By: DWA Date: 9/18/98

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet

Depth to Groundwater Before Purging (below TOC) 5.56 feet

Feet of Water in Well 12.44 feet

Depth to Groundwater When 80% Recovered 8.05 feet

Casing Volume (feet of water x Casing DIA² x 0.0408) 2.0 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	Time	pH	Temp (C/ ^o F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0</u>		<u>6.74</u>	<u>21.0</u>	<u>10,500</u>		<u>lt. yellowish-green, clear, some particles, slight odor</u>
<u>2</u>		<u>6.69</u>	<u>22.5</u>	<u>10,500</u>		<u>Same as above, slightly clearer</u>
<u>4</u>		<u>6.67</u>	<u>22.0</u>	<u>10,500</u>		<u>Same as above</u>
<u>6</u>		<u>6.70</u>	<u>21.5</u>	<u>13,500</u>		<u>Same as above</u>

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) ~~11.0~~ 9.78 feet

Sampling Method disposable bailer

Containers Used _____ 2 _____
40 ml liter pint

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PLATE

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: 501 MW-9
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.68 feet
 Feet of Water in Well 13.32 feet
 Depth to Groundwater When 80% Recovered 7.34 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.69	28.0	14000		lt. greenish yellow, clear, spotty sheen, odor
3		6.63	27.0	16,000		same
5		6.63	26.5	15000		dk. greenish yellow, partially clear, slight odor
7		6.67	25.5	20500		same

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) 14.84' (9/21/98, 12:15 pm), 6.36' feet
 Sampling Method disposable bailer
 Containers Used 2 40 ml liter pint

7.60
from

Subsurface Consultants

<small>JOB NUMBER</small>	<small>DATE</small>	<small>APPROVED</small>	<small>PLATE</small>
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WELL SAMPLING FORM

Project Name: K.O.T./9th Ave. Well Number: SC1 MW-10
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.92 feet
 Feet of Water in Well 13.08 feet
 Depth to Groundwater When 80% Recovered 7.54 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.1 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate/slow recharge

Gallons Removed	Time	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.92</u>	<u>22.0</u>	<u>10,500</u>		<u>lt. greenish-yellow, clear slight odor, some particles</u>
<u>3</u>		<u>6.98</u>	<u>22.5</u>	<u>10,500</u>		<u>dk. greenish-brown, murky, v. slight odor, lots of particles</u>
<u>5</u>		<u>6.96</u>	<u>22.0</u>	<u>10,500</u>		<u>Same as above</u>
<u>7</u>		<u>6.92</u>	<u>22.0</u>	<u>10,500</u>		<u>med. greenish-brown somewhat clear, odor, some particles</u>

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) ~~13.00~~ 7.51 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ 1 liter _____ pint

Subsurface Consultants

JOB NUMBER

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APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SC1MW-11
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/23/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.77 feet
 Feet of Water in Well 13.23 feet
 Depth to Groundwater When 80% Recovered 7.42 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

immediate recharge

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	DO = 2.1 ppm Salinity ‰	Comments
<u>1</u>		<u>6.99</u>	<u>23.0</u>	<u>9750</u>		<u>mucky / slight odor</u>
<u>3</u>		<u>7.00</u>	<u>23.0</u>	<u>10000</u>		
<u>5</u>		<u>7.00</u>	<u>23.0</u>	<u>10000</u>		↓
<u>7</u>		<u>7.01</u>	<u>23.0</u>	<u>10000</u>		<u>decreasing turbidity</u>

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.77 feet
 Sampling Method _____
 Containers Used 4 40 ml 5 liter 2 pint

Subsurface Consultants

JOB NUMBER

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PLATE

WELL SAMPLING FORM

Project Name: K.O.T. / 19th Ave. Well Number: SL1 MW-12
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 6.80 feet
 Feet of Water in Well 11.20 feet
 Depth to Groundwater When 80% Recovered 9.04 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.8 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder / Other
 Free Product None
 Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	D.O. = 3.7 ppm Salinity %	Comments
0		7.10	20.5	19500		v. slight odor, muddy brown , clear some particles
2		7.40	21.0	10500		v. slight odor, muddy brown lots of particles
4		7.15	21.0	19500		same as above
6		7.13	21.0	10500		same as above

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.96' feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml 2 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave / K.O.T. Well Number: SC1 MW-13
 Job No.: 133,009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.50 feet
 Depth to Groundwater Before Purging (below TOC) 5.14 feet
 Feet of Water in Well 13.36 feet
 Depth to Groundwater When 80% Recovered 7.81 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.81</u>	<u>23.5</u>	<u>17,500</u>		<u>greenish yellow, clear, some particles, oily sheen</u>
<u>3</u>		<u>6.82</u>	<u>23.5</u>	<u>17,500</u>		<u>dk. green, murky, lots of particles same as above, no sheen, odor</u>
<u>5</u>		<u>6.77</u>	<u>24.0</u>	<u>17,500</u>		<u>v. dk. green-brown, lots of particles, odor, slight sheen</u>
<u>7</u>		<u>6.78</u>	<u>23.0</u>	<u>19,500</u>		<u>dk. green, clear, spotty sheen, odor, some particles</u>

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) ~~17.14~~ 7.79 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ 2 liter _____ pint

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JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: K.O.T./9th Ave. Well Number: SC/MW-14
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA/K.S. Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 8.16 feet
 Feet of Water in Well 9.84 feet
 Depth to Groundwater When 80% Recovered 10.13 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.6 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product None
 Purge Method disposable bailer

moderate recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity %	Comments
1		6.84	21.5	14500	D.O. = 1.4 ppm	Slight greenish tint clear, slight odor, some particles
2		6.78	21.0	14000		" " "
3		6.74	21.0	13500		" " "
4		6.81	21.0	14000		" " "
5		6.75	21.0	15000		" " "

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 8.97 feet
 Sampling Method disposable bailer
 Containers Used 4 40 ml 2 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T Well Number: SEMW-15
Job No.: 133009 Well Casing Diameter: 2 inches
Sampled By: DWA Date: 9/21/98
TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 16.00 feet
Depth to Groundwater Before Purging (below TOC) 8.28 feet
Feet of Water in Well 7.72 feet
Depth to Groundwater When 80% Recovered 9.82 feet
Casing Volume (feet of water x Casing DIA² x 0.0408) 1.3 gallons
Depth Measurement Method Tape & Paste Electronic Sounder / Other _____
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.78</u>	<u>27.0°</u>	<u>7,000</u>		<u>gray, cloudy, slight odor</u>
<u>2</u>		<u>6.78</u>	<u>27.5°</u>	<u>7,000</u>		<u>light gray, slight odor</u>
<u>3</u>		<u>6.81</u>	<u>27.5°</u>	<u>7,000</u>		<u>same</u>
<u>4</u>		<u>6.79</u>	<u>27.5</u>	<u>7,000</u>		

Total Gallons Purged 4 gallons
Depth to Groundwater Before Sampling (below TOC) 8.46 feet
Sampling Method disposable bailer
Containers Used _____ 2 _____
40 ml liter pint

Subsurface Consultants

JOB NUMBER

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APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SC1MW-16
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 3.36 feet
 Feet of Water in Well 14.64 feet
 Depth to Groundwater When 80% Recovered 6.29 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.4 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder / Other _____
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		5.44	25.0	26,000		gray large particles, cloudy, slight odor, streaky skin
4		5.48	24.5	26,000		same, cloudy, no skin
6		5.52	24.0	27,000		same
8		5.46	24.0	28,000		same except few large particles

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 14.12' (9/21/98, 10 30 am); 6.06' feet
 Sampling Method disposable bailer
 Containers Used _____ liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: 501 MW-17
 Job No.: 133009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.50 feet
 Depth to Groundwater Before Purging (below TOC) 3.20 feet
 Feet of Water in Well 15.30 feet
 Depth to Groundwater When 80% Recovered 6.26 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge

Gallons Removed	Time	broken pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		4.82	25.0	9500		clear, some particles, slight odor
4		4.78	24.5	9,000		same, more particles
6		4.77	24.0	9,000		same
8		5.13	24.0	11,500		same, more particles cloudy, slight green

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 13.52' (9/21/98, 1105 Am) feet
6.26 @ 1330
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ liter _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SC1MW18
 Job No.: 133209 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 3.58 feet
 Feet of Water in Well 14.42 feet
 Depth to Groundwater When 80% Recovered 6.46 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.4 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

very slow recharge

Gallons Removed	Time	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>		<u>6.68</u>	<u>27.5</u>	<u>17,000</u>		<u>lt. greenish yellow, clear, some particles</u>
<u>4</u>		<u>6.64</u>	<u>26.5</u>	<u>17,000</u>		<u>same</u>
<u>6</u>		<u>6.61</u>	<u>25.5</u>	<u>17,500</u>		<u>same, more particles</u>
<u>8</u>		<u>6.67</u>	<u>24.5</u>	<u>21,000</u>		<u>same, less particles</u>

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) ~~15.24~~ (9/21/98, 1345m) 5.00' feet
 Sampling Method disposable bailer
 Containers Used _____ liter _____ pint

*11:20 8:15pm
12
1.6
2.16*

<h2 style="margin: 0;">Subsurface Consultants</h2>	JOB NUMBER	DATE	APPROVED

PLATE

WELL SAMPLING FORM

Project Name: K.O.T./9th Ave. Well Number: SC1MW-19
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.08 feet
 Feet of Water in Well 13.92 feet
 Depth to Groundwater When 80% Recovered 6.86 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.87	25.5	12,500		<i>clear, slight odor</i>
3		6.80	25.5	9,000		<i>v. lt. gray, same as above</i>
5		6.80	26.0	8,000		<i>Same as above. (200 blank spec)</i>
7		6.79	25.5	11,500		<i>Same as above except murky gray</i>

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) ~~7.52~~ 5.16 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ liter _____ pint _____

<h2 style="margin: 0;">Subsurface Consultants</h2>			PLATE
	JOB NUMBER	DATE	APPROVED

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SC1 MW-20
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 2.32 feet
 Feet of Water in Well 15.68 feet
 Depth to Groundwater When 80% Recovered 5.46 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.6 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder / Other _____
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		6.70	21.0	13500		clear k. brown, few particles, slight odor
4		6.82	20.0	14500		dk. gray, streaky sheen, strong odor
6		6.88	20.0	12500		Same as above
8		6.85	19.0	17,000		Same as above

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 11.36' (9/21/98, 8:25am) 2.0' feet
 Sampling Method disposable bailer
 Containers Used _____ / _____ pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SC1MW-21
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 2.13 feet
 Feet of Water in Well 15.87 feet
 Depth to Groundwater When 80% Recovered 5.30 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 26 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

*slow recharge
(overnight)*

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>		<u>6.76</u>	<u>20.0</u>	<u>5000</u>		<u>semi-clean/ no odor</u>
<u>4</u>		<u>6.71</u>	<u>19.5</u>	<u>6000</u>		<u>murky</u>
<u>6</u>		<u>6.73</u>	<u>18.5</u>	<u>12,000</u>		<u>↓</u>
<u>8</u>		<u>6.79</u>	<u>18.0</u>	<u>17,750</u>		
<u>10</u>		<u>6.91</u>	<u>18.0</u>	<u>15,750</u>		<u>dry @ 10 gals.</u>

Total Gallons Purged 10 gallons

Depth to Groundwater Before Sampling (below TOC) 2.22' feet

Sampling Method disposable bailer

Containers Used _____ 2 _____
40 ml liter pint

Subsurface Consultants

JOB NUMBER _____ DATE _____ APPROVED _____

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave / K.O.T. Well Number: SC1 MW-22
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 14.50 feet
 Depth to Groundwater Before Purging (below TOC) 4.76 feet
 Feet of Water in Well 9.74 feet
 Depth to Groundwater When 80% Recovered 6.71 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.6 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>1</u>		<u>6.65</u>	<u>25.0</u>	<u>20,000</u>		<u>clear brown tint / no odor</u>
<u>2</u>		<u>6.64</u>	<u>20.0</u>	<u>26,750</u>		
<u>3</u>		<u>6.62</u>	<u>17.5</u>	<u>26,000</u>		
<u>4</u>		<u>6.60</u>	<u>17.0</u>	<u>27,750</u>		
<u>5</u>		<u>6.58</u>	<u>16.5</u>	<u>29,000</u>		

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 5.17 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: 9th Ave./K.O.T. Well Number: SC1 MW-23
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/23/98
 TOC Elevation: _____ Weather: sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.28 feet
 Feet of Water in Well 13.72 feet
 Depth to Groundwater When 80% Recovered 7.02 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other _____
 Free Product none
 Purge Method disposable bailer slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	D.O. = .4 ppm Salinity = %	Comments
1		6.44	22.0	11,500		clean / no odor
3		6.47	21.0	13,250		↓
5		6.55	20.0	16,750		↓
7		6.74	19.0	24,000		murky
8		6.83	19.0	23,000		dry @ 8 gals.

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.37 on 9/24/98 @ 1245 feet
 Sampling Method disposable bailer
 Containers Used 3 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

15.34

WELL SAMPLING FORM

Project Name: K.O.T. 19th Ave. Well Number: MW-24
 Job No.: 133,009 Well Casing Diameter: 2 inches
 Sampled By: DJA Date: 9/18/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.78 feet
 Feet of Water in Well 13.22 feet
 Depth to Groundwater When 80% Recovered 7.42 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

fast recharge

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	D.O. = 1 ppm Salinity 5%	Comments
1		6.40	22.0	13500		organic cloudy, spotty sheen, some gas moderate odor, lots of dk. gray sediment, odor
3		6.45	22.5	14000		"same as above"
5		6.47	22.5	13500		same as above, except less spotty sheen
7		6.38	22.5	13000		same as above

Total Gallons Purged 7 gallons
 Depth to Groundwater Before Sampling (below TOC) 4.95 feet
 Sampling Method disposable bailer
 Containers Used 4 40 ml 4 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SC1Mw-26
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.00 feet
 Depth to Groundwater Before Purging (below TOC) 3.92 feet
 Feet of Water in Well 15.08 feet
 Depth to Groundwater When 80% Recovered 6.94 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate / slow recharge

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>		<u>6.52</u>	<u>23.5</u>	<u>17500</u>		<u>it's gray, cloudy, slightly turbid</u>
<u>4</u>		<u>6.53</u>	<u>23.0</u>	<u>18000</u>		<u>same</u>
<u>6</u>		<u>6.51</u>	<u>24.0</u>	<u>14500</u>		<u>same</u>
<u>8</u>		<u>6.54</u>	<u>24.0</u>	<u>18000</u>		<u>same</u>

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 3.98' feet
 Sampling Method disposable bailer
 Containers Used _____ / 1 liter _____ pint _____

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

3.98

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SC1 MW-27
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/22/98
 TOC Elevation: _____ Weather: loggy

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.85 feet
 Feet of Water in Well 13.15 feet
 Depth to Groundwater When 80% Recovered 7.48 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.2 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Slow recharge

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.68	19.5	16,050		clear/slight odor
3		6.52	19.0	17,000		↓
5		6.54	18.5	18,750		↓
7		6.67	18.0	22,250		↓
9		6.85	17.5	25,750		murky/dry @ 9 gals.

Total Gallons Purged 9 gallons
 Depth to Groundwater Before Sampling (below TOC) 7.52 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ liter _____ pint _____

Subsurface Consultants

		PLATE
JOB NUMBER	DATE	APPROVED

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SC1 MW-28
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/23/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 20.00 feet
 Depth to Groundwater Before Purging (below TOC) 5.47 feet
 Feet of Water in Well 14.53 feet
 Depth to Groundwater When 80% Recovered 8.38 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.4 gallons
 Depth Measurement Method Tape & Paste / **Electronic Sounder** / Other
 Free Product none
 Purge Method disposable bailer

slow recharge

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
2		6.52	17.5	2000		<i>semi-clear/no odor</i>
4		6.69	17.0	8000		↓
6		6.76	16.5	19,500		↑
8		6.85	16.5	23,000		<i>increasing turbidity well drawn down near bottom milky</i>

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.97 on 9/25/98 @ 0830 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ 4 liter _____ pint _____

<h1 style="margin: 0;">Subsurface Consultants</h1>	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SCMW-30
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 19.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.71 feet
 Feet of Water in Well 14.29 feet
 Depth to Groundwater When 80% Recovered 7.57 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.3 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.66	21.0	19,000		gray, cloudy, slight odor
3		6.58	21.9	17,000		dk. gray, strong odor
5		6.56	21.0	19,000		same
7		6.58	21.9	18,500		same

Total Gallons Purged _____ gallons
 Depth to Groundwater Before Sampling (below TOC) 15.72' (9/21/98, 140 mm), 5.8' 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: 9th Ave. / K.O.T. Well Number: SCMW-31D
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: Foggy

Depth to Casing Bottom (below TOC) 49.50 feet
 Depth to Groundwater Before Purging (below TOC) 7.58 feet
 Feet of Water in Well 41.92 feet
 Depth to Groundwater When 80% Recovered 15.96 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 6.8 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method disposable bailer

FIELD MEASUREMENTS

fast redchange

Gallons Removed	Time	pH	Temp (°C) (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>5</u>		<u>6.69</u>	<u>19.5</u>	<u>17,000</u>		<u>clear/no odor</u>
<u>10</u>		<u>5.73</u>	<u>20.0</u>	<u>20,000</u>		↓
<u>15</u>		<u>5.14</u>	<u>19.5</u>	<u>19,790</u>		
<u>20</u>		<u>5.08</u>	<u>23.0</u>	<u>17,000</u>		
<u>25</u>		<u>5.07</u>	<u>23.0</u>	<u>16,000</u>		

Total Gallons Purged 25 gallons

Depth to Groundwater Before Sampling (below TOC) 8.18 feet

Sampling Method disposable bailer

Containers Used 4 liter _____ pint _____
40 ml

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: 9th Ave./K.O.T. Well Number: SCIMW-32
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: 60994

Depth to Casing Bottom (below TOC) 20.00 feet
 Depth to Groundwater Before Purging (below TOC) 5.04 feet
 Feet of Water in Well 14.96 feet
 Depth to Groundwater When 80% Recovered 8.03 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.4 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

*slow recharge
(low hrs.)*

Gallons Removed	Time	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
2		6.62	22.0	11,000		1b. gray-green, slight odor, cloudy
4		6.61	22.5	7000		same, slight sheen
6		5.06	21.5	10,000		same
8		5.11	21.0	19,000		same, no sheen

Total Gallons Purged 8 gallons

Depth to Groundwater Before Sampling (below TOC) 14.28' (9/21/98, 9:15 AM) 5.21 feet
e 11:30

Sampling Method disposable bailer

Containers Used 4 1 _____
40 ml liter pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SCMW-33
 Job No.: .133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/21/98
 TOC Elevation: _____ Weather: foggy

Depth to Casing Bottom (below TOC) 16.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.32 feet
 Feet of Water in Well 11.68 feet
 Depth to Groundwater When 80% Recovered 6.66 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.9 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

*moderate
recharge*

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0		4.93	25.0	11,000 11,000		lt. greenish water, slight odor, clear, few particles
2		4.91	27.0	11,000		more particles, same slight sheen
4		4.92	26.5	11,000		same as above, no sheen, more cloudy
6		4.98	25.0	13,000		same

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 11.56' (9/21/98 950Am) 510 @ 145 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: 9th Ave. / K.O.T. Well Number: SC1 MW-34
 Job No.: 133,009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/23/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 15.00 feet
 Depth to Groundwater Before Purging (below TOC) 6.06 feet
 Feet of Water in Well 8.94 feet
 Depth to Groundwater When 80% Recovered 7.85 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.5 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other:
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity %	Comments
1		6.79	20.5	16,000		clear / no odor w/ some particles
2		6.73	19.5	19,000		
3		6.73	18.5	21,000		increasing turbidity
4		6.74	18.0	22,250		murky
5		6.87	20.0	20,250		dry @ 5 gals.

Salinity = 11%
 D.O. = 1.4 ppm
 Salinity 5%

Slow recharge

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 9.88 feet
 Sampling Method disposable bailer
 Containers Used 4 40 ml 5 liter 2 pint

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. / K.O.T. Well Number: SCIMW-35
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 9/25/98
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 14.50 feet
 Depth to Groundwater Before Purging (below TOC) 5.36 feet
 Feet of Water in Well 9.14 feet
 Depth to Groundwater When 80% Recovered 7.19 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.5 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product none
 Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	Time	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
1		6.63	21.5	15500		clear, some particles, slight odor
2		6.63	21.5	16000		same
3		6.62	22.0	18500		same, more cloudy
4		6.74	20.0	16000		same
5		6.76	21.5	17500		cloudy

Total Gallons Purged 5 gallons
 Depth to Groundwater Before Sampling (below TOC) 5.72' feet
 Sampling Method disposable bailer
 Containers Used _____ / _____ / _____
40 ml liter pint

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: 9th Ave. Terminal Well Number: SC1MW-20
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 10/6/98 (resample)
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 18.00 feet
 Depth to Groundwater Before Purging (below TOC) 243 feet
 Feet of Water in Well 15.57 feet
 Depth to Groundwater When 80% Recovered 5.54 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 2.5 gallons
 Depth Measurement Method Tape & Paste Electronic Sounder Other _____
 Free Product None
 Purge Method disposable bailer

FIELD MEASUREMENTS

slow recharge (overnight)

Gallons Removed	Time	pH	Temp (°C/°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>2</u>		<u>6.79</u>	<u>20.3</u>	<u>15,250</u>		<u>clean/no odor</u>
<u>4</u>		<u>6.80</u>	<u>21.0</u>	<u>15,650</u>		<u>↓</u>
<u>6</u>		<u>6.85</u>	<u>19.0</u>	<u>17,750</u>		<u>semi-clean</u>
<u>8</u>		<u>6.84</u>	<u>18.0</u>	<u>19,420</u>		<u>↓</u>

Total Gallons Purged 8 gallons
 Depth to Groundwater Before Sampling (below TOC) 2.45 on 10/7/98 @ 0955 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ liter _____ pint

Subsurface Consultants

JOB NUMBER _____ DATE _____ APPROVED _____

PLATE

WELL SAMPLING FORM

Project Name: 7th Ave. Terminal Well Number: SEM-33
 Job No.: 133.009 Well Casing Diameter: 2 inches
 Sampled By: DWA Date: 10/6/98 (resample)
 TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 16.00 feet
 Depth to Groundwater Before Purging (below TOC) 4.60 feet
 Feet of Water in Well 11.40 feet
 Depth to Groundwater When 80% Recovered 6.88 feet
 Casing Volume (feet of water x Casing DIA² x 0.0408) 1.9 gallons
 Depth Measurement Method Tape & Paste / Electronic Sounder / Other
 Free Product None
 Purge Method disposable bailer

FIELD MEASUREMENTS

moderate recharge

Gallons Removed	Time	pH	Temp (°C / °F)	Conductivity (micromhos/cm)	Salinity S%	Comments
0		6.68	24.0	13,350		<i>clear faint odor</i>
2		6.68	23.0	12,950		↓
4		6.67	23.0	14,280		↓
6		6.69	22.5	20,100		<i>munky</i>

Total Gallons Purged 6 gallons
 Depth to Groundwater Before Sampling (below TOC) 6.88 feet
 Sampling Method disposable bailer
 Containers Used _____ 40 ml _____ 2 liter _____ pint _____

Subsurface Consultants

JOB NUMBER

DATE

APPROVED

PLATE

Approval No.

SP 8 12 92

IWM, INC.

NON-HAZARDOUS WATER TRANSPORT
CERTIFICATE OF DISPOSAL

Ticket No.

SP123098-A

GENERATOR INFORMATION

Name: PORT OF OAKLAND
Address: 530 WATER STREET
City, State, Zip: OAKLAND, CA 94607

CUSTOMER INFORMATION

Name: IWM
Address: 950 AMES
City, State, Zip: MILPITAS, CA 95035
Purchase Order #: _____Description of Water: NON-HAZARDOUS WASTE WATER

NON-HAZARDOUS WASTE WATER, MONITORING WELL PURGE WATER AND/OR AUGER RINSATE, TANK RINSATE OR ABOVE DESCRIBED WATER. THIS WATER MAY CONTAIN DISSOLVED HYDROCARBONS. I CERTIFY THAT THE BELOW NAMED MATERIAL IS A LIQUID EXEMPT FROM RCRA PER 40 CFR 261.4(B)(10) AND DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE AS DESCRIBED IN 22 CCR ARTICLE 11 OR ANY OTHER APPLICABLE STATE LAW, HAS BEEN PROPERLY DESCRIBED, CLASSIFIED AND PACKAGED AND IS IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO APPLICABLE REGULATIONS.

SITE INFORMATION

IWM Job #	Site #	Site Address	# of Drum	Gallons
50479-DW		10TH AVE AND DEFREMERY, OAKLAND	10	
Estimated Total			10	

TRANSPORTER INFORMATION

Name: IWM, Inc.
Address: 950 Ames Avenue
Milpitas, CA 95035
Phone: 408-942-8955Truck ID #: 102-103Driver Name: Bill Penn

DISPOSAL FACILITY INFORMATION

Name: Seaport Environmental
Address: 675 Seaport Blvd
Port of Redwood City, CA 94063
Phone: 650-364-1024

Signature

12/31/98
Date

IWM certifies that this non-hazardous waste water will be treated and disposed at Seaport Environmental in accordance with applicable Federal, State, and local regulations.


Printed Name & Signature

12-31-98
Date

DOC{TRANPRT.FRM}



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 15-OCT-98
Lab Job Number: 135939
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by:

Reviewed by:

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SAMPLE ID: SCI MW-20
LAB ID: 135939-001
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave. Terminal
MATRIX: Filtrate

DATE RECEIVED: 10/07/98
DATE RECEIVED: 10/07/98
DATE REPORTED: 10/15/98

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0 ✓	1	43966	EPA 6010A	10/14/98

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135939

DATE RECEIVED: 10/15/98
Curtis & Tompkins, Ltd.

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Lead	ND	3	ug/L	1	43966	EPA 6010A	10/14/98

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135939

DATE **db** 10/15/98
E. DRITTEL Curtis & Tompkins, Ltd.

**BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE**

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Lead	500	521	515	ug/L	104	103	80-120	1	35	43966	EPA 6010A	10/14/98

CLIENT: Subsurface Consultants
JOB NUMBER: 135939

DATE RECEIVED: 10/15/98
Curtis & Tompkins, Ltd.

BATCH QC REPORT
SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Lead	135939-001	<3.000	<3.000	ug/L	NC	20	43966	EPA 6010A	10/14/98

NC = Not Calculable

CLIENT: Subsurface Consultants
JOB NUMBER: 135939

DATE 10/15/98
Curtis & Tompkins, Ltd.

BATCH QC REPORT
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Lead	500	135939-001	<3.000	443	ug/L	89	65-135	43966	EPA 6010A	10/14/98

CHAIN OF CUSTODY FORM

135931

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133.009 LAB: Curtiss & Tompkins
 PROJECT CONTACT: Meg Mendoza TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

ANALYSIS REQUESTED											

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME	
<u>1</u>	<u>SC1MW-20</u>	<u>X</u>					<u>1</u>						<u>X</u>		<u>10</u>	<u>07</u>	<u>98</u>	<u>1000</u>	<u>*X</u>

Lead 6/6/700

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES: <u>* Please Sign/Date before analysts</u>	
RELEASED BY: (Signature) <u>Dennis Alexander</u>	DATE / TIME <u>10/7/98</u> <u>10:20</u>	RELEASED BY: (Signature) <u>Meg Mendoza</u>	DATE / TIME <u>10/7</u> <u>10:25</u>		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		

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A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 21-OCT-98
Lab Job Number: 135812
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by:

Reviewed by:

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135812-001	MW-3	43801	09/29/98	10/05/98	10/13/98	

Matrix: Water

Analyte	Units	135812-001
Diln Fac:		1
Diesel C12-C22	ug/L	<50 [✓]
Motor Oil C22-C50	ug/L	<300 [✓]
Surrogate		
Hexacosane	%REC	98

Lab #: 135812

BATCH QC REPORT



Curtis & Tompkins, Ltd.
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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 43801
Units: ug/L
Diln Fac: 1

Prep Date: 10/05/98
Analysis Date: 10/13/98

MB Lab ID: QC81539

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	95	53-136

Lab #: 135812

BATCH QC REPORT



Curtis & Tompkins, Ltd.
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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43801
Units: ug/L
Diln Fac: 1

Prep Date: 10/05/98
Analysis Date: 10/13/98

BS Lab ID: QC81540

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2565	1583	64	58-110
Surrogate	%Rec	Limits		
Hexacosane	100	53-136		

BSD Lab ID: QC81541

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2565	1617	65	58-110	3	21
Surrogate	%Rec	Limits				
Hexacosane	94	53-136				

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

CHAIN OF CUSTODY FORM

PROJECT NAME: 9th Ave Terminal
 JOB NUMBER: 133.009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meg Mendoza/Dei Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

ANALYSIS REQUESTED											

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES		
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME			
	MW-3	X					1									09	29	98	1315	X	

NOTES
 TEFed (9/29/98 w/ 133.009)

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <u>Dei Alexander</u>	DATE / TIME 9/29/98 1415	RELEASED BY: (Signature) <u>[Signature]</u>	DATE / TIME 9/29/98 1415
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 03-NOV-98
Lab Job Number: 135688
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by:

Reviewed by:

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Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. TerminalAnalysis Method: EPA 8260
Prep Method: EPA 5030Field ID: SCI MW-31D
Lab ID: 135688-003
Matrix: Water
Batch#: 43685
Units: ug/L
Diln Fac: 1Sampled: 09/21/98
Received: 09/21/98
Extracted: 09/30/98
Analyzed: 09/30/98

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND✓	10
Bromomethane	ND	10
Chloroethane	ND✓	10
Trichlorofluoromethane	ND	5.0
Acetone	ND✓	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND✓	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND✓	5.0
trans-1,2-Dichloroethene	ND✓	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND✓	5.0
2-Butanone	ND✓	10
cis-1,2-Dichloroethene	ND✓	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND✓	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND✓	5.0
Benzene	ND✓	5.0
Trichloroethene	ND✓	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND✓	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND✓	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND✓	5.0
Ethylbenzene	ND✓	5.0
m,p-Xylenes	ND✓	5.0
o-Xylene	ND✓	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0

Surrogate	Recovery	Recovery Limits
1,2-Dichloroethane-d4	107	85-121
Toluene-d8	101	92-110
Bromofluorobenzene	101	84-115



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
 Prep Method: EPA 5030

Field ID: SCI MW-32
 Lab ID: 135688-004
 Matrix: Water
 Batch#: 43685
 Units: ug/L
 Diln Fac: 1

Sampled: 09/21/98
 Received: 09/21/98
 Extracted: 09/30/98
 Analyzed: 09/30/98

Analyte	Result	Reporting Limit
Chloromethane	ND ✓	10
Vinyl Chloride	ND ✓	10
Bromomethane	ND ✓	10
Chloroethane	ND ✓	10
Trichlorofluoromethane	ND ✓	5.0
Acetone	ND ✓	20
Freon 113	ND ✓	5.0
1,1-Dichloroethene	ND ✓	5.0
Methylene Chloride	ND ✓	20
Carbon Disulfide	ND ✓	5.0
trans-1,2-Dichloroethene	ND ✓	5.0
Vinyl Acetate	ND ✓	50
1,1-Dichloroethane	ND ✓	5.0
2-Butanone	ND ✓	10
cis-1,2-Dichloroethene	ND ✓	5.0
Chloroform	ND ✓	5.0
1,1,1-Trichloroethane	ND ✓	5.0
Carbon Tetrachloride	ND ✓	5.0
1,2-Dichloroethane	ND ✓	5.0
Benzene	ND ✓	5.0
Trichloroethene	ND ✓	5.0
1,2-Dichloropropane	ND ✓	5.0
Bromodichloromethane	ND ✓	5.0
4-Methyl-2-Pentanone	ND ✓	10
cis-1,3-Dichloropropene	ND ✓	5.0
Toluene	ND ✓	5.0
trans-1,3-Dichloropropene	ND ✓	5.0
1,1,2-Trichloroethane	ND ✓	5.0
2-Hexanone	ND ✓	10
Tetrachloroethene	ND ✓	5.0
Dibromochloromethane	ND ✓	5.0
Chlorobenzene	ND ✓	5.0
Ethylbenzene	ND ✓	5.0
m,p-Xylenes	ND ✓	5.0
o-Xylene	ND ✓	5.0
Styrene	ND ✓	5.0
Bromoform	ND ✓	5.0
1,1,2,2-Tetrachloroethane	ND ✓	5.0
Surrogate	*Recovery	Recovery Limits
1,2-Dichloroethane-d4	103	85-121
Toluene-d8	100	92-110
Bromofluorobenzene	101	84-115



Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
Prep Method: EPA 5030

Field ID: SCI MW-33
Lab ID: 135688-005
Matrix: Water
Batch#: 43714
Units: ug/L
Diln Fac: 2

Sampled: 09/21/98
Received: 09/21/98
Extracted: 10/01/98
Analyzed: 10/01/98

Analyte	Result	Reporting Limit
Chloromethane	ND	20
Vinyl Chloride	ND ✓	20
Bromomethane	ND	20
Chloroethane	ND ✓	20
Trichlorofluoromethane	ND	10
Acetone	ND ✓	40
Freon 113	ND	10
1,1-Dichloroethene	ND ✓	10
Methylene Chloride	ND	40
Carbon Disulfide	ND ✓	10
trans-1,2-Dichloroethene	ND ✓	10
Vinyl Acetate	ND	100
1,1-Dichloroethane	ND ✓	10
2-Butanone	ND ✓	20
cis-1,2-Dichloroethene	ND ✓	10
Chloroform	ND	10
1,1,1-Trichloroethane	ND ✓	10
Carbon Tetrachloride	ND	10
1,2-Dichloroethane	ND ✓	10
Benzene	ND ✓	10
Trichloroethene	ND ✓	10
1,2-Dichloropropane	ND	10
Bromodichloromethane	ND	10
4-Methyl-2-Pentanone	ND ✓	20
cis-1,3-Dichloropropene	ND	10
Toluene	ND ✓	10
trans-1,3-Dichloropropene	ND	10
1,1,2-Trichloroethane	ND	10
2-Hexanone	ND	20
Tetrachloroethene	ND	10
Dibromochloromethane	ND	10
Chlorobenzene	260 ✓	10
Ethylbenzene	ND ✓	10
m,p-Xylenes	ND ✓	10
o-Xylene	ND ✓	10
Styrene	ND	10
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	108	85-121
Toluene-d8	101	92-110
Bromofluorobenzene	102	84-115

Lab #: 135688

BATCH QC REPORT



Curtis & Tompkins, Ltd.
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EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43685
Units: ug/L
Diln Fac: 1

Prep Date: 09/30/98
Analysis Date: 09/30/98

MB Lab ID: QC81122

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	100	85-121
Toluene-d8	99	92-110
Bromofluorobenzene	100	84-115

Lab #: 135688

BATCH QC REPORT

Curtis & Tompkins, Ltd.
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EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 43714
 Units: ug/L
 Diln Fac: 1

Prep Date: 10/01/98
 Analysis Date: 10/01/98

MB Lab ID: QC81224

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	106	85-121
Toluene-d8	102	92-110
Bromofluorobenzene	103	84-115



EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
 Prep Method: EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 43685
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/30/98
 Analysis Date: 09/30/98

BS Lab ID: QC81119

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	48.45	97	69-137
Benzene	50	47.95	96	87-117
Trichloroethene	50	50.67	101	83-116
Toluene	50	50.58	101	88-116
Chlorobenzene	50	50.13	100	87-117
Surrogate	%Rec	Limits		
1,2-Dichloroethane-d4	94	85-121		
Toluene-d8	98	92-110		
Bromofluorobenzene	95	84-115		

BSD Lab ID: QC81120

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	46.13	92	69-137	5	14
Benzene	50	46.52	93	87-117	3	10
Trichloroethene	50	48.99	98	83-116	3	10
Toluene	50	49.62	99	88-116	2	10
Chlorobenzene	50	49.42	99	87-117	1	10
Surrogate	%Rec	Limits				
1,2-Dichloroethane-d4	95	85-121				
Toluene-d8	98	92-110				
Bromofluorobenzene	94	84-115				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 10/01/98
Batch#: 43714	Analysis Date: 10/01/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81226

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	51.23	102	69-137
Benzene	50	50.44	101	87-117
Trichloroethene	50	52.96	106	83-116
Toluene	50	53.57	107	88-116
Chlorobenzene	50	52.79	106	87-117

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	101	85-121
Toluene-d8	100	92-110
Bromofluorobenzene	97	84-115

BSD Lab ID: QC81227

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	49.18	98	69-137	4	14
Benzene	50	49.91	100	87-117	1	10
Trichloroethene	50	52.16	104	83-116	2	10
Toluene	50	52.5	105	88-116	2	10
Chlorobenzene	50	51.03	102	87-117	3	10

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	102	85-121
Toluene-d8	101	92-110
Bromofluorobenzene	97	84-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	Cleanup Method: 3630 some

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135688-001	SCI MW-15	43578	09/21/98	09/23/98	10/22/98	
135688-002	SCI MW-17	43578	09/21/98	09/23/98	10/22/98	
135688-004	SCI MW-32	43578	09/21/98	09/23/98	10/22/98	
135688-005	SCI MW-33	43578	09/21/98	09/23/98	10/22/98	

Matrix: Water

Analyte	Units	SCM 15			
		135688-001	135688-002	135688-004	135688-005
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	<50 ✓	<50 ✓	<50 ✓	210 YL ✓
Motor Oil C22-C50	ug/L	<300 ✓	<300 ✓	<300 ✓	<300 ✓
Surrogate					
Hexacosane	%REC	68	79	78	80

Y: Sample exhibits fuel pattern which does not resemble standard

L: Lighter hydrocarbons than indicated standard

Chromatogram

Sample Name : 135688-005,43578,SG

Sample #: 43578

Page 1 of 1

FileName : C:\GC11\CHA\294A029.RAW

Date : 10/23/98 08:41 AM

Method : ATEH293.MTH

Time of Injection: 10/22/98 01:16 PM

Start Time : 0.12 min

End Time : 31.91 min

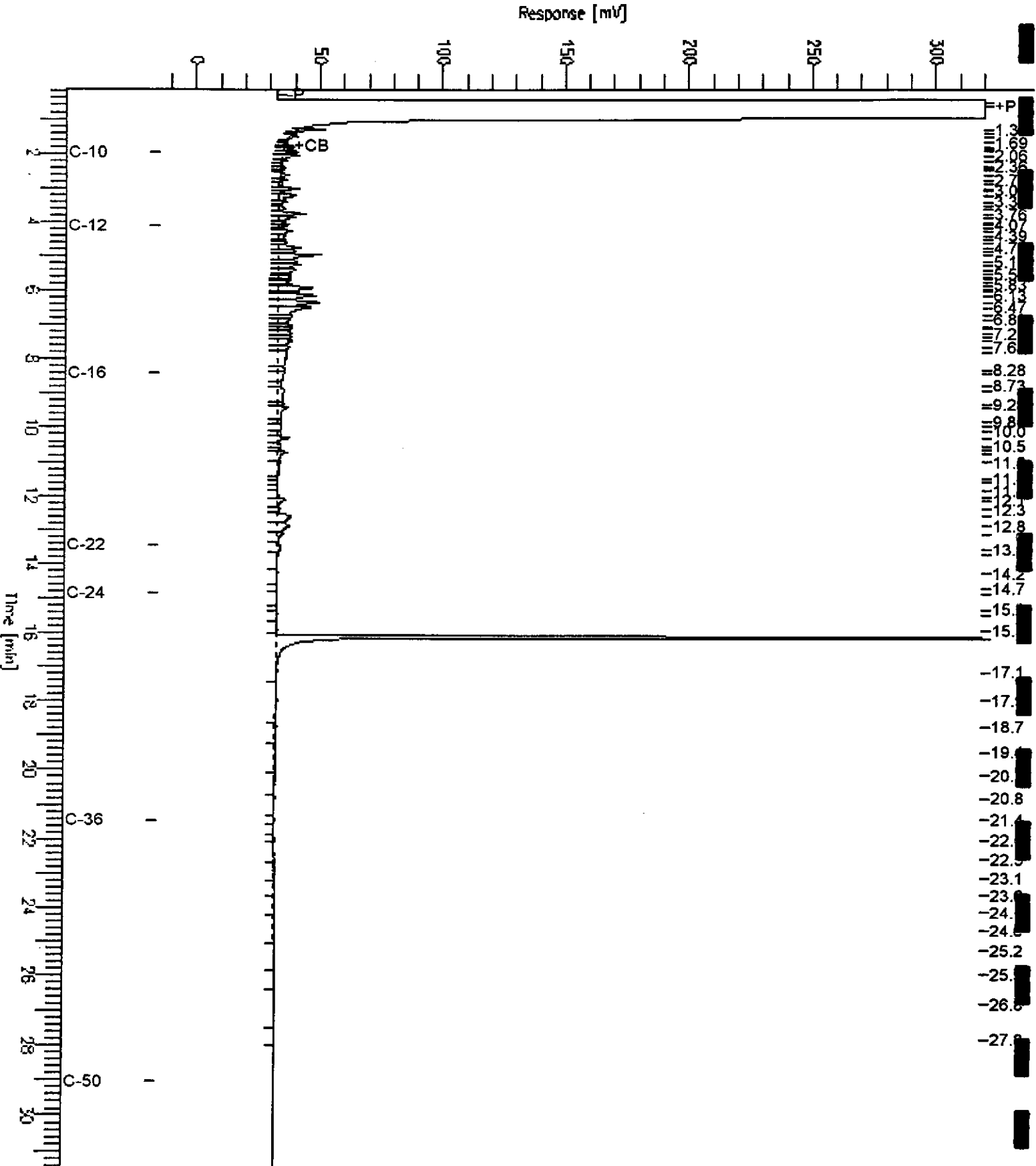
Low Point : -15.06 mV

High Point : 320.09 mV

Scale Factor: 0.0

Plot Offset: -15 mV

Plot Scale: 335.1 mV



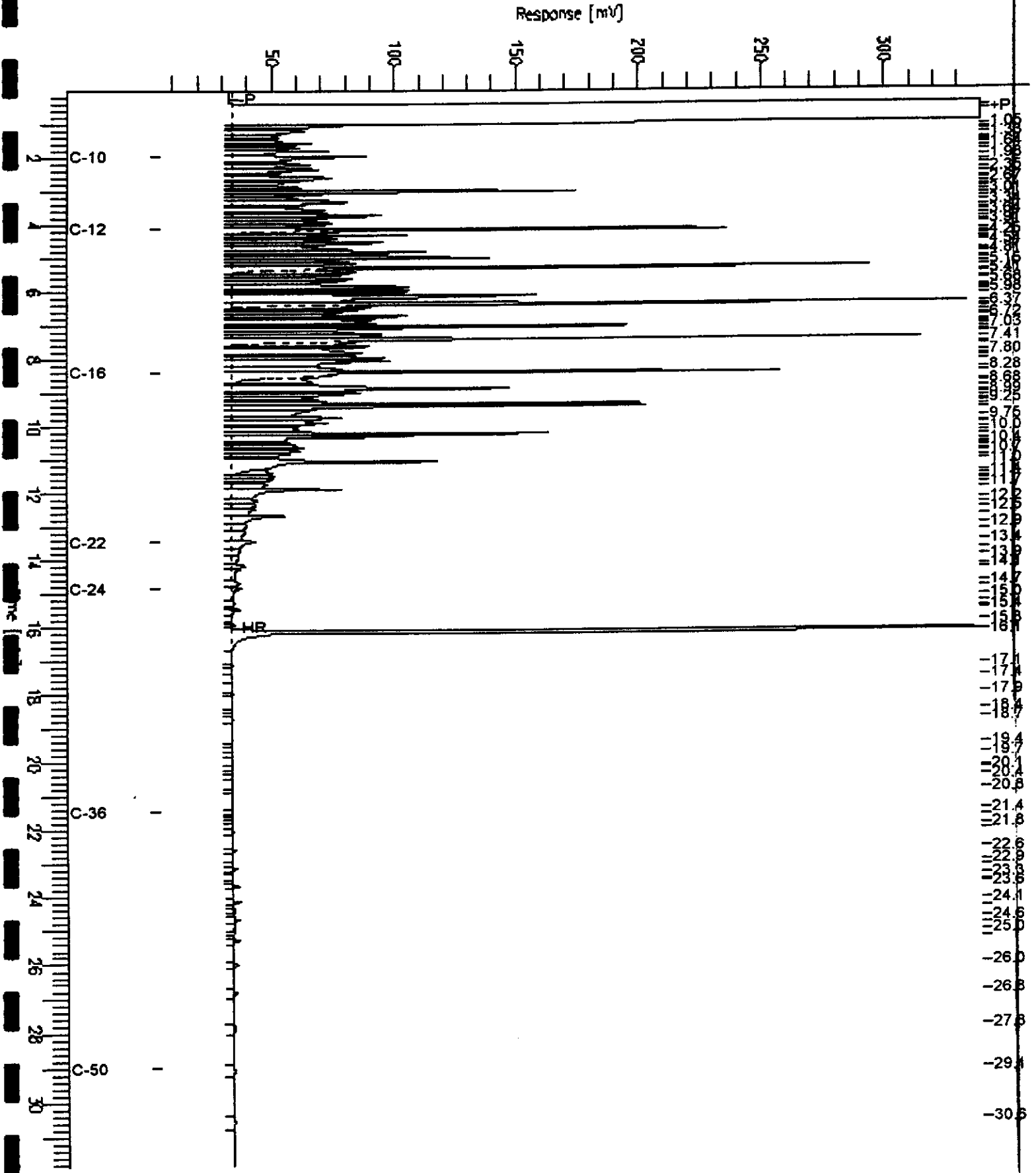
Chromatogram

Sample Name : CCV, 98WS6585, DS
File Name : C:\GC11\CHA\294A001.RAW
Method : ATEH293.MTH
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.91 min
Plot Offset : 5 mV

Sample #: 500MG/L
Date : 10/22/98 08:19 AM
Time of Injection: 10/21/98 06:28 PM
Low Point : 4.65 mV
Plot Scale : 335.0 mV
High Point : 339.64 mV

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Lab #: 135688

BATCH QC REPORT



Curtis & Tompkins Ltd.
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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520
Cleanup Method: EPA 3630 some

METHOD BLANK

Matrix: Water
Batch#: 43578
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/98
Analysis Date: 10/22/98

MB Lab ID: QC80705

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	82	53-136

Lab #: 135688

BATCH QC REPORT



Curtis & Tompkins Ltd. Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave.Terminal	Cleanup Method: EPA 3630 some

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/23/98
Batch#: 43578	Analysis Date: 10/22/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC80706

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1980	80	58-110
Surrogate	%Rec	Limits		
Hexacosane	85	53-136		

BSD Lab ID: QC80707

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2049	83	58-110	3	21
Surrogate	%Rec	Limits				
Hexacosane	91	53-136				

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



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCI MW-15
Lab ID: 135688-001
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/21/98
Received: 09/21/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
N-Nitrosodimethylamine	ND	9.5
Phenol	ND✓	9.5
Aniline	ND	9.5
bis(2-Chloroethyl) ether	ND	9.5
2-Chlorophenol	ND	9.5
1,3-Dichlorobenzene	ND	9.5
1,4-Dichlorobenzene	ND✓	9.5
Benzyl alcohol	ND✓	9.5
1,2-Dichlorobenzene	ND✓	9.5
2-Methylphenol	ND✓	9.5
bis(2-Chloroisopropyl) ether	ND	9.5
3,4-Methylphenol	ND	9.5
N-Nitroso-di-n-propylamine	ND	9.5
Hexachloroethane	ND	9.5
Nitrobenzene	ND	9.5
Isophorone	ND	9.5
2-Nitrophenol	ND	48
2,4-Dimethylphenol	ND✓	9.5
Benzoic acid	ND✓	48
bis(2-Chloroethoxy)methane	ND	9.5
2,4-Dichlorophenol	ND	9.5
1,2,4-Trichlorobenzene	ND	9.5
Naphthalene	ND	9.5
4-Chloroaniline	ND	9.5
Hexachlorobutadiene	ND	9.5
4-Chloro-3-methylphenol	ND	9.5
2-Methylnaphthalene	ND	9.5
Hexachlorocyclopentadiene	ND	48
2,4,6-Trichlorophenol	ND	9.5
2,4,5-Trichlorophenol	ND	9.5
2-Chloronaphthalene	ND	9.5
2-Nitroaniline	ND	48
Dimethylphthalate	ND	9.5
Acenaphthylene	ND	9.5
2,6-Dinitrotoluene	ND	9.5
3-Nitroaniline	ND	48
Acenaphthene	ND	9.5
2,4-Dinitrophenol	ND	48



Semivolatile Organics by GC/MS

Field ID: SCI MW-15	Sampled: 09/21/98
Lab ID: 135688-001	Received: 09/21/98
Matrix: Filtrate	Extracted: 09/23/98
Batch#: 43579	Analyzed: 10/02/98
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
4-Nitrophenol	ND	48
Dibenzofuran	ND	9.5
2,4-Dinitrotoluene	ND	9.5
Diethylphthalate	ND	9.5
Fluorene	ND	9.5
4-Chlorophenyl-phenylether	ND	9.5
4-Nitroaniline	ND	48
4,6-Dinitro-2-methylphenol	ND	48
N-Nitrosodiphenylamine	ND	9.5
Azobenzene	ND	9.5
4-Bromophenyl-phenylether	ND	9.5
Hexachlorobenzene	ND	9.5
Pentachlorophenol	ND ✓	9.5
Phenanthrene	ND	9.5
Anthracene	ND	9.5
Di-n-butylphthalate	ND	9.5
Fluoranthene	ND	9.5
Pyrene	ND	9.5
Butylbenzylphthalate	ND	9.5
3,3'-Dichlorobenzidine	ND	48
Benzo (a) anthracene	ND	9.5
Chrysene	ND	9.5
bis (2-Ethylhexyl) phthalate	ND ✓	9.5
Di-n-octylphthalate	ND ✓	9.5
Benzo (b, k) fluoranthene	ND	9.5
Benzo (a) pyrene	ND	9.5
Indeno (1, 2, 3-cd) pyrene	ND	9.5
Dibenz (a, h) anthracene	ND	9.5
Benzo (g, h, i) perylene	ND	9.5

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	64	17-107
Phenol-d5	66	18-115
2,4,6-Tribromophenol	84	14-121
Nitrobenzene-d5	70	36-115
2-Fluorobiphenyl	80	36-113
Terphenyl-d14	42	17-115

Lab #: 135688

BATCH QC REPORT

Curtis & Tompkins, Ltd.
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EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43579
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/23/98
 Analysis Date: 10/01/98

MB Lab ID: QC80708

Analyte	Result	Reporting Limit
N-Nitrosodimethylamine	ND	10
Phenol	ND	10
Aniline	ND	10
bis(2-Chloroethyl) ether	ND	10
2-Chlorophenol	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
Benzyl alcohol	ND	10
1,2-Dichlorobenzene	ND	10
2-Methylphenol	ND	10
bis(2-Chloroisopropyl) ether	ND	10
3,4-Methylphenol	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
bis(2-Chloroethoxy)methane	ND	10
2,4-Dichlorophenol	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
4-Chloro-3-methylphenol	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	50
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50
Acenaphthene	ND	10
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
Dibenzofuran	ND	10

Lab #: 135688

BATCH QC REPORT

Curtis & Tompkins, Ltd.
Page 2 of 2

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43579
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/23/98
 Analysis Date: 10/01/98

MB Lab ID: QC80708

Analyte	Result	Reporting Limit
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
Fluorene	ND	10
4-Chlorophenyl-phenylether	ND	10
4-Nitroaniline	ND	50
4,6-Dinitro-2-methylphenol	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Pentachlorophenol	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b,k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	84	17-107
Phenol-d5	86	18-115
2,4,6-Tribromophenol	83	14-121
Nitrobenzene-d5	81	36-115
2-Fluorobiphenyl	81	36-113
Terphenyl-d14	99	17-115



EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 09/23/98
Batch#: 43579	Analysis Date: 10/01/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC80709

Analyte	Spike Added	BS	%Rec	#	Limits
Phenol	100	67.64	68		45-110
2-Chlorophenol	100	62.24	62		50-110
1,4-Dichlorobenzene	50	26.53	53		38-110
N-Nitroso-di-n-propylamine	50	33.91	68		29-110
1,2,4-Trichlorobenzene	50	26.38	53		41-110
4-Chloro-3-methylphenol	100	70.68	71		48-110
Acenaphthene	50	28.92	58		50-110
4-Nitrophenol	100	57.52	58		30-110
2,4-Dinitrotoluene	50	28.2	56		40-110
Pentachlorophenol	100	77.23	77		10-110
Pyrene	50	30.47	61		43-110
Surrogate	%Rec	Limits			
2-Fluorophenol	71	17-107			
Phenol-d5	72	18-115			
2,4,6-Tribromophenol	83	14-121			
Nitrobenzene-d5	75	36-115			
2-Fluorobiphenyl	72	36-113			
Terphenyl-d14	80	17-115			

BSD Lab ID: QC80710

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Phenol	100	70.81	71		45-110	5	23
2-Chlorophenol	100	65.78	66		50-110	6	23
1,4-Dichlorobenzene	50	27.17	54		38-110	2	21
N-Nitroso-di-n-propylamine	50	36.71	73		29-110	8	22
1,2,4-Trichlorobenzene	50	27.92	56		41-110	6	21
4-Chloro-3-methylphenol	100	76.68	77		48-110	8	20
Acenaphthene	50	31.81	64		50-110	9	18
4-Nitrophenol	100	65.82	66		30-110	13	26
2,4-Dinitrotoluene	50	31.6	63		40-110	11	19
Pentachlorophenol	100	88.99	89		10-110	14	44
Pyrene	50	33.67	67		43-110	10	19
Surrogate	%Rec	Limits					
2-Fluorophenol	72	17-107					
Phenol-d5	77	18-115					
2,4,6-Tribromophenol	94	14-121					
Nitrobenzene-d5	80	36-115					
2-Fluorobiphenyl	80	36-113					
Terphenyl-d14	89	17-115					

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 11 outside limits
 Spike Recovery: 0 out of 22 outside limits

137688

CHAIN OF CUSTODY FORM

PAGE OF
 ANALYSIS REQUESTED

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133,009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meq Mendoza/Leri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meq Mendoza

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES				
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME					
-1	SCIMW-15	X					2						X			09	21	98			X	X	TRL'd (8015 m w/silicagel) 8270 SVOC's (Filtered) VOC's 8260/8240/1st
-2	SCIMW-17	X					1						X								X	X	
-3	SCIMW-31D	X				4				X		X	X								X	X	
-4	SCIMW-32	X				4	1			X		X	X								X	X	
-5	SCIMW-33	X				4	1			X		X	X			09	21	98			X	X	

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE / TIME 9/21/98 1415	RELEASED BY: (Signature) <i>Leslie Sparks</i>	DATE / TIME 9/21/98 1420
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

SCI Subsurface Consultants, Inc.
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 03-NOV-98
Lab Job Number: 135699
Project ID: 133.009
Location: KOT/9th Ave. Terminal

Reviewed by: _____

Reviewed by: _____

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135699-001	SCI MW-1	43768	09/22/98	10/02/98	10/09/98	
135699-002	SCI MW-7	43768	09/22/98	10/02/98	10/09/98	
135699-003	SCI MW-9	43768	09/22/98	10/02/98	10/09/98	
135699-004	SCI MW-16	43768	09/22/98	10/02/98	10/09/98	

Matrix: Water

Analyte	Units	SCI MW-1	SCI MW-7	SCI MW-9	SCI MW-16
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	<50 ✓	<50 ✓	95 YH ✓	<50 ✓
Motor Oil C22-C50	ug/L	<300 ✓	<300 ✓	600 YH ✓	<300 ✓
Surrogate					
Hexacosane	%REC	140 *	104	95	96

* Values outside of QC limits

Y: Sample exhibits fuel pattern which does not resemble standard

H: Heavier hydrocarbons than indicated standard

Chromatogram

Sample Name : 135699-003,43768,SG

Sample #: 43768

Page 1 of 1

FileName : C:\GC13\CHB\281B016.RAW

Date : 10/9/98 09:44 AM

Method : BTEH280.MTH

Time of Injection: 10/9/98 03:56 AM

Start Time : 0.01 min End Time : 31.91 min

Low Point : 10.03 mV

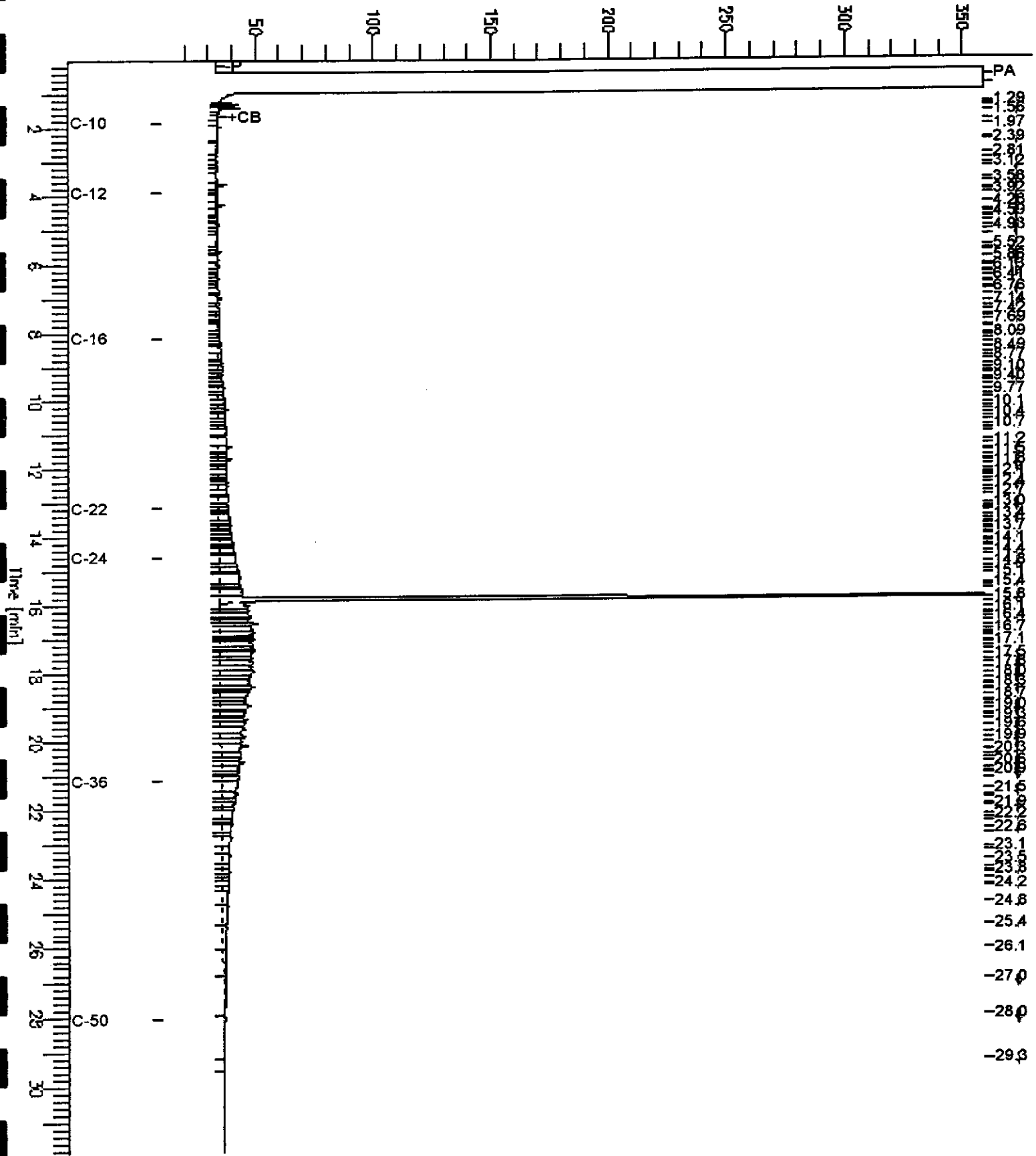
High Point : 359.23 mV

Scale Factor: 0.0

Plot Offset: 10 mV

Plot Scale: 349.2 mV

Response [mV]





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135699-005	SCI MW-22	43768	09/22/98	10/02/98	10/09/98	
135699-006	SCI MW-26	43768	09/22/98	10/02/98	10/09/98	
135699-007	SCI MW-27	43768	09/22/98	10/02/98	10/09/98	

Matrix: Water

Analyte	Units	SCI MW-22	26	27
Diln Fac:		1	1	1
Diesel C12-C22	ug/L	<50 ✓	<50 ✓	<50 ✓
Motor Oil C22-C50	ug/L	<300 ✓	<300 ✓	<300 ✓
Surrogate				
Hexacosane	%REC	99	104	83



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43768
 Units: ug/L
 Diln Fac: 1

Prep Date: 10/02/98
 Analysis Date: 10/09/98

MB Lab ID: QC81423

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	91	53-136



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 10/02/98
Batch#: 43768	Analysis Date: 10/09/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81424

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1588	64	58-110
Surrogate	%Rec	Limits		
Hexacosane	98	53-136		

BSD Lab ID: QC81425

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	1586	64	58-110	0	21
Surrogate	%Rec	Limits				
Hexacosane	99	53-136				

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



Semivolatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCI MW-9
Lab ID: 135699-003
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/22/98
Received: 09/22/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
N-Nitrosodimethylamine	ND	9.7
Phenol	ND✓	9.7
Aniline	ND	9.7
bis(2-Chloroethyl) ether	ND	9.7
2-Chlorophenol	ND	9.7
1,3-Dichlorobenzene	ND	9.7
1,4-Dichlorobenzene	ND✓	9.7
Benzyl alcohol	ND✓	9.7
1,2-Dichlorobenzene	ND✓	9.7
2-Methylphenol	ND✓	9.7
bis(2-Chloroisopropyl) ether	ND	9.7
3,4-Methylphenol	ND	9.7
N-Nitroso-di-n-propylamine	ND	9.7
Hexachloroethane	ND	9.7
Nitrobenzene	ND	9.7
Isophorone	ND	9.7
2-Nitrophenol	ND	48
2,4-Dimethylphenol	ND✓	9.7
Benzoic acid	ND✓	48
bis(2-Chloroethoxy) methane	ND	9.7
2,4-Dichlorophenol	ND	9.7
1,2,4-Trichlorobenzene	ND	9.7
Naphthalene	ND	9.7
4-Chloroaniline	ND	9.7
Hexachlorobutadiene	ND	9.7
4-Chloro-3-methylphenol	ND	9.7
2-Methylnaphthalene	ND	9.7
Hexachlorocyclopentadiene	ND	48
2,4,6-Trichlorophenol	ND	9.7
2,4,5-Trichlorophenol	ND	9.7
2-Chloronaphthalene	ND	9.7
2-Nitroaniline	ND	48
Dimethylphthalate	ND	9.7
Acenaphthylene	ND	9.7
2,6-Dinitrotoluene	ND	9.7
3-Nitroaniline	ND	48
Acenaphthene	ND	9.7
2,4-Dinitrophenol	ND	48



Semivolatiles Organics by GC/MS

Field ID: SCI MW-9	Sampled: 09/22/98
Lab ID: 135699-003	Received: 09/22/98
Matrix: Filtrate	Extracted: 09/23/98
Batch#: 43579	Analyzed: 10/02/98
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
4-Nitrophenol	ND	48
Dibenzofuran	ND	9.7
2,4-Dinitrotoluene	ND	9.7
Diethylphthalate	ND	9.7
Fluorene	ND	9.7
4-Chlorophenyl-phenylether	ND	9.7
4-Nitroaniline	ND	48
4,6-Dinitro-2-methylphenol	ND	48
N-Nitrosodiphenylamine	ND	9.7
Azobenzene	ND	9.7
4-Bromophenyl-phenylether	ND	9.7
Hexachlorobenzene	ND	9.7
Pentachlorophenol	ND✓	9.7
Phenanthrene	ND	9.7
Anthracene	ND	9.7
Di-n-butylphthalate	ND	9.7
Fluoranthene	ND	9.7
Pyrene	ND	9.7
Butylbenzylphthalate	ND	9.7
3,3'-Dichlorobenzidine	ND	48
Benzo (a) anthracene	ND	9.7
Chrysene	ND	9.7
bis(2-Ethylhexyl)phthalate	ND✓	9.7
Di-n-octylphthalate	ND✓	9.7
Benzo (b,k) fluoranthene	ND	9.7
Benzo (a) pyrene	ND	9.7
Indeno (1,2,3-cd) pyrene	ND	9.7
Dibenz (a,h) anthracene	ND	9.7
Benzo (g,h,i) perylene	ND	9.7

Surrogate	%Recovery	Recovery Limits
2-Fluorophenol	67	17-107
Phenol-d5	68	18-115
2,4,6-Tribromophenol	83	14-121
Nitrobenzene-d5	72	36-115
2-Fluorobiphenyl	80	36-113
Terphenyl-d14	48	17-115

Lab #: 135699

BATCH QC REPORT

Curtis & Tompkins, Ltd.
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EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43579
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/23/98
 Analysis Date: 10/01/98

MB Lab ID: QC80708

Analyte	Result	Reporting Limit
N-Nitrosodimethylamine	ND	10
Phenol	ND	10
Aniline	ND	10
bis(2-Chloroethyl) ether	ND	10
2-Chlorophenol	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
Benzyl alcohol	ND	10
1,2-Dichlorobenzene	ND	10
2-Methylphenol	ND	10
bis(2-Chloroisopropyl) ether	ND	10
3,4-Methylphenol	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
2-Nitrophenol	ND	50
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
bis(2-Chloroethoxy)methane	ND	10
2,4-Dichlorophenol	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
4-Chloro-3-methylphenol	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	50
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	50
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	50
Acenaphthene	ND	10
2,4-Dinitrophenol	ND	50
4-Nitrophenol	ND	50
Dibenzofuran	ND	10



EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43579
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/23/98
 Analysis Date: 10/01/98

MB Lab ID: QC80708

Analyte	Result	Reporting Limit
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
Fluorene	ND	10
4-Chlorophenyl-phenylether	ND	10
4-Nitroaniline	ND	50
4,6-Dinitro-2-methylphenol	ND	50
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Pentachlorophenol	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	50
Benzo (a) anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl) phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
2-Fluorophenol	84	17-107
Phenol-d5	86	18-115
2,4,6-Tribromophenol	83	14-121
Nitrobenzene-d5	81	36-115
2-Fluorobiphenyl	81	36-113
Terphenyl-d14	99	17-115

Lab #: 135699

BATCH QC REPORT

Curtis & Tompkins, Ltd.
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EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 133,009
Location: KOT/9th Ave. TerminalAnalysis Method: EPA 8270B
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43579
Units: ug/L
Diln Fac: 1Prep Date: 09/23/98
Analysis Date: 10/01/98

BS Lab ID: QC80709

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	67.64	68	45-110
2-Chlorophenol	100	62.24	62	50-110
1,4-Dichlorobenzene	50	26.53	53	38-110
N-Nitroso-di-n-propylamine	50	33.91	68	29-110
1,2,4-Trichlorobenzene	50	26.38	53	41-110
4-Chloro-3-methylphenol	100	70.68	71	48-110
Acenaphthene	50	28.92	58	50-110
4-Nitrophenol	100	57.52	58	30-110
2,4-Dinitrotoluene	50	28.2	56	40-110
Pentachlorophenol	100	77.23	77	10-110
Pyrene	50	30.47	61	43-110
Surrogate	%Rec	Limits		
2-Fluorophenol	71	17-107		
Phenol-d5	72	18-115		
2,4,6-Tribromophenol	83	14-121		
Nitrobenzene-d5	75	36-115		
2-Fluorobiphenyl	72	36-113		
Terphenyl-d14	80	17-115		

BSD Lab ID: QC80710

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	70.81	71	45-110	5	23
2-Chlorophenol	100	65.78	66	50-110	6	23
1,4-Dichlorobenzene	50	27.17	54	38-110	2	21
N-Nitroso-di-n-propylamine	50	36.71	73	29-110	8	22
1,2,4-Trichlorobenzene	50	27.92	56	41-110	6	21
4-Chloro-3-methylphenol	100	76.68	77	48-110	8	20
Acenaphthene	50	31.81	64	50-110	9	18
4-Nitrophenol	100	65.82	66	30-110	13	26
2,4-Dinitrotoluene	50	31.6	63	40-110	11	19
Pentachlorophenol	100	88.99	89	10-110	14	44
Pyrene	50	33.67	67	43-110	10	19
Surrogate	%Rec	Limits				
2-Fluorophenol	72	17-107				
Phenol-d5	77	18-115				
2,4,6-Tribromophenol	94	14-121				
Nitrobenzene-d5	80	36-115				
2-Fluorobiphenyl	80	36-113				
Terphenyl-d14	89	17-115				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits



Volatile Organics by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
 Prep Method: EPA 5030

Field ID: SCI MW-7
 Lab ID: 135699-002
 Matrix: Water
 Batch#: 43667
 Units: ug/L
 Diln Fac: 50

Sampled: 09/22/98
 Received: 09/22/98
 Extracted: 09/29/98
 Analyzed: 09/29/98

Analyte	Result	Reporting Limit
Chloromethane	ND	500
Vinyl Chloride	2400✓	500
Bromomethane	ND	500
Chloroethane	1400✓	500
Trichlorofluoromethane	ND	250
Acetone	ND✓	1000
Freon 113	ND	250
1,1-Dichloroethene	ND✓	250
Methylene Chloride	ND	1000
Carbon Disulfide	ND✓	250
trans-1,2-Dichloroethene	180 J✓	250
Vinyl Acetate	ND	2500
1,1-Dichloroethane	1700✓	250
2-Butanone	ND✓	500
cis-1,2-Dichloroethene	5000✓	250
Chloroform	ND	250
1,1,1-Trichloroethane	1600✓	250
Carbon Tetrachloride	ND	250
1,2-Dichloroethane	ND✓	250
Benzene	1100✓	250
Trichloroethene	ND✓	250
1,2-Dichloropropane	ND	250
Bromodichloromethane	ND	250
4-Methyl-2-Pentanone	ND✓	500
cis-1,3-Dichloropropene	ND	250
Toluene	480✓	250
trans-1,3-Dichloropropene	ND	250
1,1,2-Trichloroethane	ND	250
2-Hexanone	ND	500
Tetrachloroethene	ND	250
Dibromochloromethane	ND	250
Chlorobenzene	ND✓	250
Ethylbenzene	ND✓	250
m,p-Xylenes	ND✓	250
o-Xylene	ND✓	250
Styrene	ND	250
Bromoform	ND	250
1,1,2,2-Tetrachloroethane	ND	250
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	104	85-121
Toluene-d8	101	92-110
Bromofluorobenzene	102	84-115

J: Estimated Value

Lab #: 135699

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

EPA 8240 Volatile Organics		
Client: Subsurface Consultants	Analysis Method: EPA 8260	
Project#: 133.009	Prep Method: EPA 5030	
Location: KOT/9th Ave. Terminal		
METHOD BLANK		
Matrix: Water	Prep Date: 09/29/98	
Batch#: 43667	Analysis Date: 09/29/98	
Units: ug/L		
Diln Fac: 1		

MB Lab ID: QC81074

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	99	85-121
Toluene-d8	99	92-110
Bromofluorobenzene	101	84-115



EPA 8240 Volatile Organics

Client: Subsurface Consultants	Analysis Method: EPA 8260
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/29/98
Batch#: 43667	Analysis Date: 09/29/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81045

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	45.88	92	69-137
Benzene	50	45.54	91	87-117
Trichloroethene	50	47.9	96	83-116
Toluene	50	48.49	97	88-116
Chlorobenzene	50	48.17	96	87-117
Surrogate			%Rec	Limits
1,2-Dichloroethane-d4			94	85-121
Toluene-d8			99	92-110
Bromofluorobenzene			96	84-115

BSD Lab ID: QC81046

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.5	95	69-137	3	14
Benzene	50	47.94	96	87-117	5	10
Trichloroethene	50	50.02	100	83-116	4	10
Toluene	50	49.76	100	88-116	3	10
Chlorobenzene	50	49.89	100	87-117	4	10
Surrogate			%Rec	Limits		
1,2-Dichloroethane-d4			95	85-121		
Toluene-d8			99	92-110		
Bromofluorobenzene			95	84-115		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



Organochlorine Pesticides and PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

Field ID: SCI MW-7
 Lab ID: 135699-002
 Matrix: Water
 Batch#: 43657
 Units: ug/L
 Diln Fac: 1

Sampled: 09/22/98
 Received: 09/22/98
 Extracted: 09/28/98
 Analyzed: 10/03/98

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND✓	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND✓	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND✓	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND✓	0.5

Surrogate	%Recovery	Recovery Limits
TCMX	0*	31-121
Decachlorobiphenyl	9.2*	30-145

* Values outside of QC limits

Lab #: 135699

BATCH QC REPORT



Curtis Salgenpkins Ltd.

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43657
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/28/98
 Analysis Date: 10/10/98

MB Lab ID: QC81014

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	83	31-121
Decachlorobiphenyl	85	30-145

Lab #: 135699

BATCH QC REPORT



Curtis & Jennings Ltd.

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 43657
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/28/98
 Analysis Date: 10/10/98

BS Lab ID: QC81015

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.52	104	62-131
Heptachlor	0.5	0.49	98	57-118
Aldrin	0.5	0.41	82	57-118
Dieldrin	0.5	0.47	94	62-123
Endrin	0.5	0.48	96	48-138
4,4'-DDT	0.5	0.46	92	56-121
Surrogate		%Rec	Limits	
TCMX		103	31-121	
Decachlorobiphenyl		58	30-145	

BSD Lab ID: QC81016

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.52	104	62-131	0	28
Heptachlor	0.5	0.49	98	57-118	0	26
Aldrin	0.5	0.4	80	57-118	2	27
Dieldrin	0.5	0.45	90	62-123	4	24
Endrin	0.5	0.48	96	48-138	0	27
4,4'-DDT	0.5	0.45	90	56-121	2	26
Surrogate		%Rec	Limits			
TCMX		95	31-121			
Decachlorobiphenyl		80	30-145			

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits

CHAIN OF CUSTODY FORM

135699

PROJECT NAME: 9th Ave. Term.
 JOB NUMBER: 133.007 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meg Mendoza / Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

ANALYSIS REQUESTED					

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME	
1	SC1 MW-1	X				1							X		09	22	98	1400	X
2	SC1 MW-7	X				4	2			X			X					1430	X
3	SC1 MW-9	X				2							X					1330	X
4	SC1 MW-16	X				1							X					1340	X
5	SC1 MW-22	X				2	1 liter amber						X					1245	X
6	SC1 MW-26	X				1							X					1345	X
7	SC1 MW-27	X				1							X		09	22	98	1330	X

TEHQd (P015m) w/ 5 liter 901
 5VOCs (8270) Filtered
 YOCs (8260/8240 list)
 Pesticides 8080

NOVOAS
 9/22/98

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES:	
RELEASED BY: (Signature) <u>Dennis Alexander</u>	DATE / TIME <u>9/22/98</u> <u>1500</u>	RELEASED BY: (Signature) <u>Leslie Sparks</u>	DATE / TIME <u>9/22/98</u> <u>1500</u>		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME		

SCI **Subsurface Consultants, Inc.**
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 02-NOV-98
Lab Job Number: 135768
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by:

Reviewed by:

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Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-28
 LAB ID: 135768-002
 CLIENT: Subsurface Consultants
 PROJECT ID: 133.009
 LOCATION: KOT/9th Ave. Terminal
 MATRIX: Filtrate

DATE SAMPLED: 09/25/98
 DATE RECEIVED: 09/25/98
 DATE REPORTED: 11/02/98

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND✓	60	1	43674	EPA 6010A	10/01/98
Arsenic	15✓	5.0	1	43674	EPA 6010A	10/01/98
Barium	96✓	10	1	43674	EPA 6010A	10/01/98
Beryllium	2.6✓	2.0	1	43674	EPA 6010A	10/01/98
Cadmium	ND✓	5.0	1	43674	EPA 6010A	10/01/98
Chromium (total)	ND✓	10	1	43674	EPA 6010A	10/01/98
Cobalt	ND✓	20	1	43674	EPA 6010A	10/01/98
Copper	13✓	10	1	43674	EPA 6010A	10/01/98
Lead	4.1✓	3.0	1	43674	EPA 6010A	10/01/98
Mercury	ND✓	0.20	1	43738	EPA 7470	10/02/98
Molybdenum	ND✓	20	1	43674	EPA 6010A	10/01/98
Nickel	ND✓	20	1	43674	EPA 6010A	10/01/98
Selenium	ND✓	5.0	1	43674	EPA 6010A	10/01/98
Silver	ND✓	5.0	1	43674	EPA 6010A	10/01/98
Thallium	ND✓	5.0	1	43674	EPA 6010A	10/01/98
Vanadium	11✓	10	1	43674	EPA 6010A	10/01/98
Zinc	260✓	20	1	43674	EPA 6010A	10/01/98

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135768

 Curtis & Tompkins, Ltd.
DATE REPORTED: 11/02/98

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	43674	EPA 6010A	09/30/98
Arsenic	ND	5	ug/L	1	43674	EPA 6010A	09/30/98
Barium	ND	10	ug/L	1	43674	EPA 6010A	09/30/98
Beryllium	ND	2	ug/L	1	43674	EPA 6010A	09/30/98
Cadmium	ND	5	ug/L	1	43674	EPA 6010A	09/30/98
Chromium (total)	ND	10	ug/L	1	43674	EPA 6010A	09/30/98
Cobalt	ND	20	ug/L	1	43674	EPA 6010A	09/30/98
Copper	ND	10	ug/L	1	43674	EPA 6010A	09/30/98
Lead	ND	3	ug/L	1	43674	EPA 6010A	09/30/98
Mercury	ND	0.2	ug/L	1	43738	EPA 7470	10/02/98
Molybdenum	ND	20	ug/L	1	43674	EPA 6010A	09/30/98
Nickel	ND	20	ug/L	1	43674	EPA 6010A	09/30/98
Selenium	ND	5	ug/L	1	43674	EPA 6010A	09/30/98
Silver	ND	5	ug/L	1	43674	EPA 6010A	09/30/98
Thallium	ND	5	ug/L	1	43674	EPA 6010A	09/30/98
Vanadium	ND	10	ug/L	1	43674	EPA 6010A	09/30/98
Zinc	ND	20	ug/L	1	43674	EPA 6010A	09/30/98

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135768

 Curtis & Tompkins, Ltd.
DATE REPORTED: 11/02/98

BATCH QC REPORT
LABORATORY CONTROL SAMPLE

Compound	Spike Amt	Result	Units	% Rec.	QC Batch	Method	Analysis Date
Antimony	500	448	ug/L	90	43674	EPA 6010A	09/30/98
Arsenic	2000	2220	ug/L	111	43674	EPA 6010A	09/30/98
Barium	2000	2290	ug/L	115	43674	EPA 6010A	09/30/98
Beryllium	50	56.5	ug/L	113	43674	EPA 6010A	09/30/98
Cadmium	50	58.9	ug/L	118	43674	EPA 6010A	09/30/98
Chromium (total)	200	221	ug/L	111	43674	EPA 6010A	09/30/98
Cobalt	500	560	ug/L	112	43674	EPA 6010A	09/30/98
Copper	250	280	ug/L	112	43674	EPA 6010A	09/30/98
Lead	500	557	ug/L	111	43674	EPA 6010A	09/30/98
Molybdenum	400	460	ug/L	115	43674	EPA 6010A	09/30/98
Nickel	500	580	ug/L	116	43674	EPA 6010A	09/30/98
Selenium	2000	2230	ug/L	112	43674	EPA 6010A	09/30/98
Silver	100	114	ug/L	114	43674	EPA 6010A	09/30/98
Thallium	2000	2400	ug/L	120	43674	EPA 6010A	09/30/98
Vanadium	500	557	ug/L	111	43674	EPA 6010A	09/30/98
Zinc	500	565	ug/L	113	43674	EPA 6010A	09/30/98



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 135768

DATE REPORTED: 11/02/98

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Mercury	5	4.898	4.807	ug/L	98	96	80-120	2	35	43738	EPA 7470	10/02/98

CLIENT: Subsurface Consultants
 JOB NUMBER: 135768

ct Curtis & Tompkins, Ltd.
 DATE REPORTED: 11/02/98

**BATCH QC REPORT
 MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

Compound	Sample	Sample Result	Spike Amount	MS Result	MSD Result	Units	MS% Rec.	MSD% Rec.	Rec. Limit	RPD %	RPD QC Lim	Method	Analysis Date
Antimony	135660-002	<60.000	500	483	532	ug/L	97	106	65-135	10	35	43674 EPA 6010A	09/30/98
Arsenic	135660-002	<5.000	2000	2200	2260	ug/L	110	113	65-135	3	35	43674 EPA 6010A	09/30/98
Barium	135660-002	150	2000	2390	2430	ug/L	112	114	65-135	2	35	43674 EPA 6010A	09/30/98
Beryllium	135660-002	<2.000	50	52.9	55	ug/L	106	110	65-135	4	35	43674 EPA 6010A	09/30/98
Cadmium	135660-002	<5.000	50	55.5	57.2	ug/L	111	114	65-135	3	35	43674 EPA 6010A	09/30/98
Chromium (total)	135660-002	<10.000	200	214	223	ug/L	107	112	65-135	4	35	43674 EPA 6010A	09/30/98
Cobalt	135660-002	<20.000	500	520	543	ug/L	104	109	65-135	4	35	43674 EPA 6010A	09/30/98
Copper	135660-002	<10.000	250	291	297	ug/L	116	119	65-135	2	35	43674 EPA 6010A	09/30/98
Lead	135660-002	<3.000	500	528	551	ug/L	106	110	65-135	4	35	43674 EPA 6010A	09/30/98
Mercury	135806-001	<0.200	5	4.716	4.355	ug/L	94	87	65-135	8	35	43738 EPA 7470	10/02/98
Molybdenum	135660-002	<20.000	400	433	453	ug/L	108	113	65-135	5	35	43674 EPA 6010A	09/30/98
Nickel	135660-002	<20.000	500	564	583	ug/L	113	117	65-135	3	35	43674 EPA 6010A	09/30/98
Selenium	135660-002	<5.000	2000	2250	2320	ug/L	113	116	65-135	3	35	43674 EPA 6010A	09/30/98
Silver	135660-002	<5.000	100	111	113	ug/L	111	113	65-135	2	35	43674 EPA 6010A	09/30/98
Thallium	135660-002	<5.000	2000	2370	2430	ug/L	119	122	65-135	3	35	43674 EPA 6010A	09/30/98
Vanadium	135660-002	<10.000	500	541	559	ug/L	108	112	65-135	3	35	43674 EPA 6010A	09/30/98
Zinc	135660-002	<20.000	500	563	579	ug/L	113	116	65-135	3	35	43674 EPA 6010A	09/30/98



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135768-001	MW-1	43887	09/25/98	10/08/98	10/20/98	
135768-002	SCIMW-28	43887	09/25/98	10/08/98	10/20/98	

Matrix: Water

Analyte	Units	135768-001	135768-002
Diln Fac:		1	1
Diesel C12-C22	ug/L	<47 ✓	<47 ✓
Motor Oil C22-C50	ug/L	<280 ✓	<280 ✓
Surrogate			
Hexacosane	%REC	92	92

Lab #: 135768

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 43887
Units: ug/L
Diln Fac: 1

Prep Date: 10/08/98
Analysis Date: 10/21/98

MB Lab ID: QC81853

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	94	53-136

Lab #: 135768

BATCH QC REPORT



Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43887
Units: ug/L
Diln Fac: 1

Prep Date: 10/08/98
Analysis Date: 10/21/98

BS Lab ID: QC81854

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1668	67	58-110
Surrogate	%Rec	Limits		
Hexacosane	93	53-136		

BSD Lab ID: QC81855

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2288	92	58-110	31 *	21
Surrogate	%Rec	Limits				
Hexacosane	126	53-136				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 1 outside limits

Spike Recovery: 0 out of 2 outside limits



PCBS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: PCB
Prep Method: EPA 3520

Field ID: SCIMW-28
Lab ID: 135768-002
Matrix: Water
Batch#: 43710
Units: ug/L
Diln Fac: 1

Sampled: 09/25/98
Received: 09/25/98
Extracted: 09/30/98
Analyzed: 10/03/98

Analyte	Result	Reporting Limit
Aroclor-1016	ND	0.47
Aroclor-1221	ND	0.94
Aroclor-1232	ND	0.47
Aroclor-1242	ND	0.47
Aroclor-1248	ND	0.47
Aroclor-1254	ND	0.47
Aroclor-1260	ND/	0.47

Surrogate	%Recovery	Recovery Limits
TCMX	70	19-130
Decachlorobiphenyl	16*	22-110

* Values outside of QC limits



Polychlorinated Biphenyls

Client: Subsurface Consultants	Analysis Method: PCB
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 09/30/98
Batch#: 43710	Analysis Date: 10/02/98
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC81209

Analyte	Result	Reporting Limit
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	65	19-130
Decachlorobiphenyl	41	22-110



Polychlorinated Biphenyls

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: PCB
 Prep Method: EPA 3520

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 43710
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/30/98
 Analysis Date: 10/02/98

LCS Lab ID: QC81211

Analyte	Result	Spike Added	%Rec #	Limits
Aroclor-1260	4.09	5	82	61-119
Surrogate	%Rec	Limits		
TCMX	74	19-130		
Decachlorobiphenyl	44	22-110		

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



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

Field ID: SCIMW-28
 Lab ID: 135768-002
 Matrix: Filtrate
 Batch#: 43731
 Units: ug/L
 Diln Fac: 1

Sampled: 09/25/98
 Received: 09/25/98
 Extracted: 10/01/98
 Analyzed: 10/07/98

TOTAL PAHs

Analyte	Result	Reporting Limit
---------	--------	-----------------

Naphthalene	ND	9.5
Acenaphthylene	ND	9.5
Acenaphthene	ND	9.5
Fluorene	ND	9.5
Phenanthrene	ND	9.5
Anthracene	ND	9.5
Fluoranthene	ND	9.5
Pyrene	ND	9.5
Benzo (a) anthracene	ND	9.5
Chrysene	ND	9.5
Benzo (b,k) fluoranthene	ND	9.5
Benzo (a) pyrene	ND	9.5
Indeno (1,2,3-cd) pyrene	ND	9.5
Dibenz (a,h) anthracene	ND	9.5
Benzo (g,h,i) perylene	ND	9.5

Surrogate	%Recovery	Recovery Limits
-----------	-----------	-----------------

Nitrobenzene-d5	84	36-115
2-Fluorobiphenyl	87	36-113
Terphenyl-d14	49	17-115

Lab #: 135768

BATCH QC REPORT



Curtis & Tompkins, Ltd.

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
METHOD BLANK	
Matrix: Water	Prep Date: 10/01/98
Batch#: 43731	Analysis Date: 10/07/98
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC81283

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b,k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1,2,3-cd) pyrene	ND	10
Dibenz (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	76	36-115
2-Fluorobiphenyl	78	36-113
Terphenyl-d14	86	17-115



Polynuclear Aromatic Hydrocarbons by GC

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 10/01/98
Batch#: 43731	Analysis Date: 10/07/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81284

Analyte	Spike Added	BS	%Rec #	Limits
Acenaphthene	50	33.88	68	50-110
Pyrene	50	32.98	66	43-110
Surrogate	%Rec	Limits		
Nitrobenzene-d5	78	36-115		
2-Fluorobiphenyl	78	36-113		
Terphenyl-d14	87	17-115		

BSD Lab ID: QC81285

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Acenaphthene	50	36.63	73	50-110	8	18
Pyrene	50	35.85	72	43-110	8	19
Surrogate	%Rec	Limits				
Nitrobenzene-d5	81	36-115				
2-Fluorobiphenyl	83	36-113				
Terphenyl-d14	94	17-115				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits

CHAIN OF CUSTODY FORM

135768

PAGE _____ OF _____
ANALYSIS REQUESTED

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133.009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meg Mendoza / Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME	
-1	MW-1	X					1						X		09	25	98	0930	X
-2	SCIMW-28	X					4						X		09	25	98	0900	*X X X X

NOTES
 TETrad (toxin -> silicagel cleanup)
 SVOCs 8270 (filtered)
 PCBs (8080)
 Heavy Metals (609/2000)

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
<i>Dennis Alexander</i>	9/25/98 1520	<i>Curt Wuthman</i>	9/25/98 1520

COMMENTS & NOTES: * Please filter/fix before metals analysis.

SCI Subsurface Consultants, Inc.
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 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 298-7960 - (925) 298-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 05-NOV-98
Lab Job Number: 135740
Project ID: 133.009
Location: KOT/9th Ave. Terminal

Reviewed by:

Reviewed by:

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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135740-001	SCIMW-18	43836	09/24/98	10/06/98	10/17/98	
135740-002	SCIMW-23	43836	09/24/98	10/06/98	10/17/98	
135740-003	SCIMW-34	43836	09/24/98	10/06/98	10/24/98	

Matrix: Water

Analyte	Units	135740-001	135740-002	135740-003
Diln Fac:		1	1	1
Diesel C12-C22	ug/L	<50	680 Y	61 Y
Motor Oil C22-C50	ug/L	<300	<300	<300
Surrogate				
Hexacosane	%REC	93	73	95

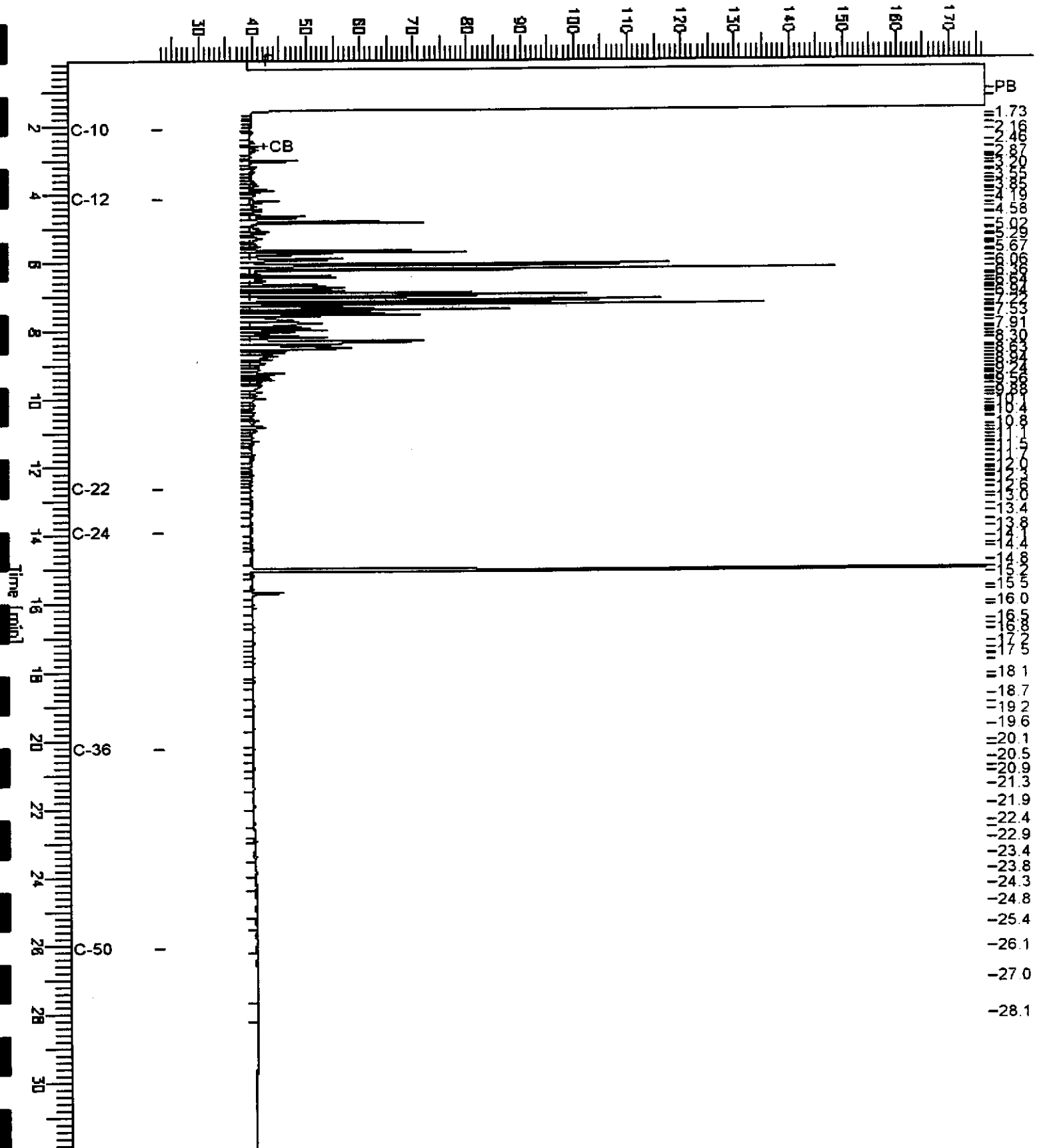
Y: Sample exhibits fuel pattern which does not resemble standard

GC15 Channel B TEH

Sample Name : 135740-002,43836
 FileName : C:\GC15\CHB\289B034.RAW
 Method : B294TEH.MTH
 Start Time : 0.09 min
 Scale Factor: 0.0

End Time : 31.91 min
 Plot Offset: 23 mV

Sample #: 43836
 Date : 10/21/98 10:21 AM
 Time of Injection: 10/17/98 10:38 AM
 Low Point : 22.99 mV
 High Point : 176.77 mV
 Plot Scale: 153.8 mV

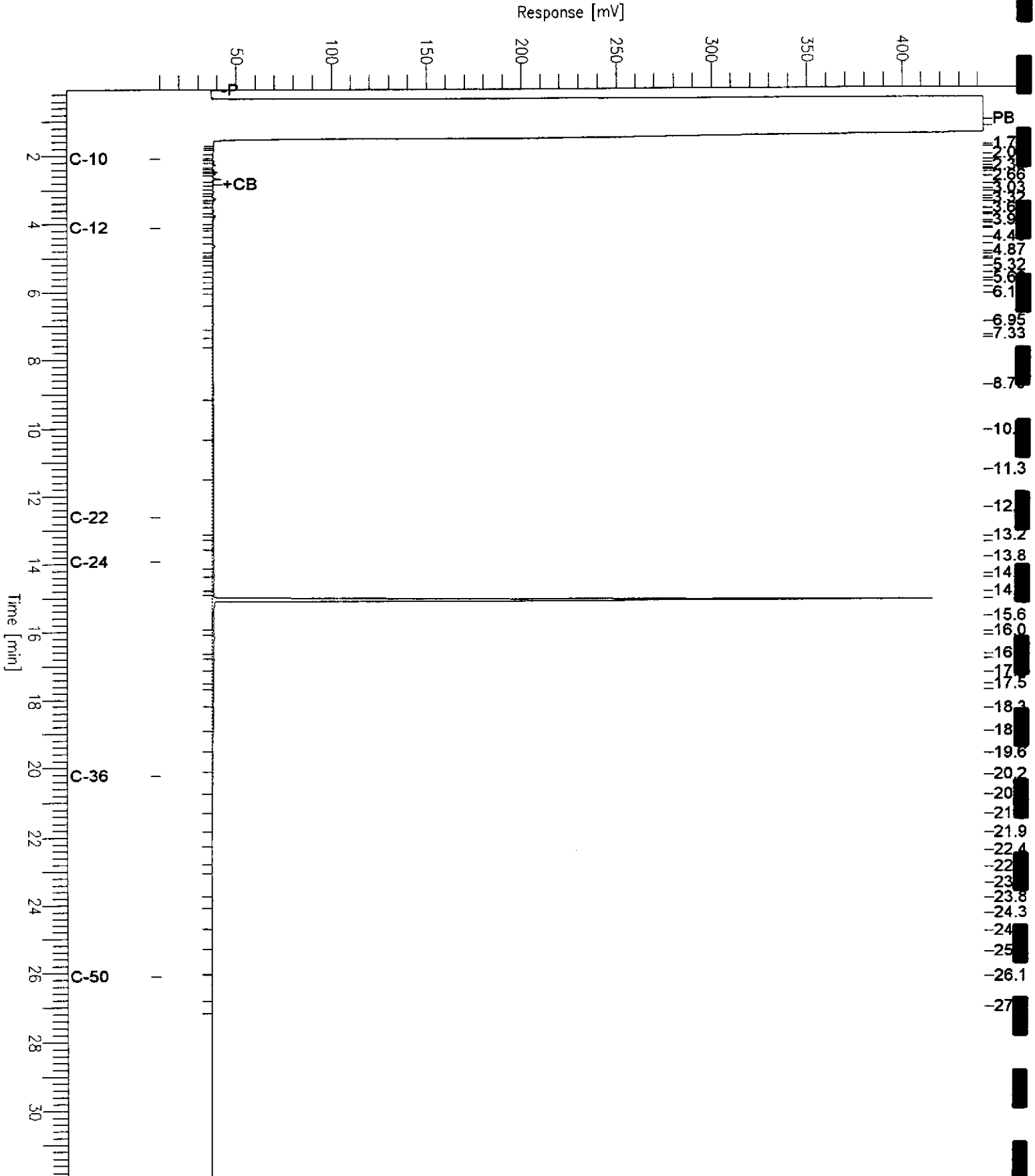


GC15 Channel B TEH

Sample Name : 135740-003,43836,sg
 FileName : C:\GC15\CHB\295B063.RAW
 Method : B299TEH.MTH
 Start Time : 0.05 min
 Scale Factor: 0.0

End Time : 31.91 min
 Plot Offset: 10 mV

Sample #: 43836
 Date : 10/26/98 06:21 PM
 Time of Injection: 10/24/98 02:19 PM
 Low Point : 9.91 mV
 Plot Scale: 433.0 mV
 High Point : 442.88 mV



Lab #: 135740

BATCH QC REPORT



Curtis & Tompkins Ltd.
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TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 43836
Units: ug/L
Diln Fac: 1

Prep Date: 10/06/98
Analysis Date: 10/15/98

MB Lab ID: QC81669

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	95	53-136

Lab #: 135740

BATCH QC REPORT



Curtis & Tompkins, Ltd.
Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43836
Units: ug/L
Diln Fac: 1

Prep Date: 10/06/98
Analysis Date: 10/15/98

BS Lab ID: QC81670

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2500	1647	67	58-110
Surrogate	%Rec	Limits		
Hexacosane	99	53-136		

BSD Lab ID: QC81671

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2500	1548	63	58-110	6	21
Surrogate	%Rec	Limits				
Hexacosane	89	53-136				

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



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-34
Lab ID: 135740-003
Matrix: Filtrate
Batch#: 43681
Units: ug/L
Diln Fac: 1

Sampled: 09/24/98
Received: 09/24/98
Extracted: 09/29/98
Analyzed: 10/07/98

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	74	36-115
2-Fluorobiphenyl	64	36-113
Terphenyl-d14	36	36-113

Lab #: 135740

BATCH QC REPORT



Curtis & Tompkins, Inc.

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 10/01/98

MB Lab ID: QC81105

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b,k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1,2,3-cd) pyrene	ND	10
Dibenz (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	67	36-115
2-Fluorobiphenyl	68	36-113
Terphenyl-d14	65	17-115



Polynuclear Aromatic Hydrocarbons by GC

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 10/01/98

BS Lab ID: QC81106

Analyte	Spike Added	BS	%Rec #	Limits
Acenaphthene	50	26.61	53	50-110
Pyrene	50	28.8	58	43-110
Surrogate	%Rec	Limits		
Nitrobenzene-d5	62	36-115		
2-Fluorobiphenyl	63	36-113		
Terphenyl-d14	73	17-115		

BSD Lab ID: QC81107

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Acenaphthene	50	28.95	58	50-110	8	18
Pyrene	50	31.27	63	43-110	8	19
Surrogate	%Rec	Limits				
Nitrobenzene-d5	66	36-115				
2-Fluorobiphenyl	66	36-113				
Terphenyl-d14	79	17-115				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135740-003	SCIMW-34	43616	09/24/98	09/25/98	09/25/98	

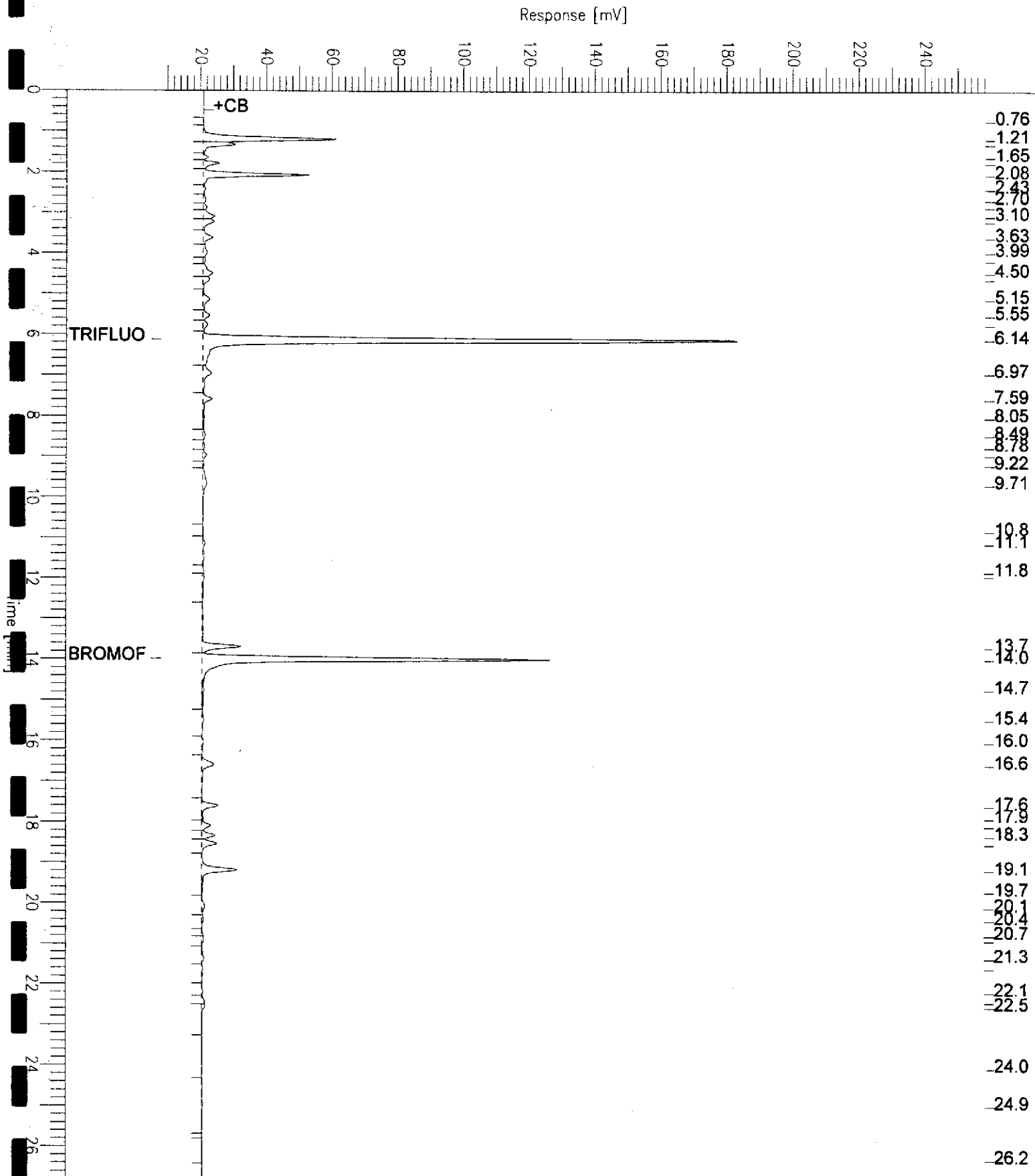
Matrix: Water

Analyte	Units	135740-003
Diln Fac:		1
Gasoline C7-C12	ug/L	92
Surrogate		
Trifluorotoluene	%REC	115
Bromofluorobenzene	%REC	125

GC05 'G' File TVH

Sample Name : S,135740-003,43616,
 FileName : G:\GC05\DATA\268G006.raw
 Method : TVHBTXE
 Start Time : 0.00 min
 Scale Factor: -1.0

Sample #: Page 1 of 1
 Date : 9/25/98 07:17 PM
 Time of Injection: 9/25/98 06:50 PM
 Low Point : 8.25 mV High Point : 258.25 mV
 Plot Offset: 8 mV
 Plot Scale: 250.0 mV





BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135740-003	SCIMW-34	43616	09/24/98	09/25/98	09/25/98	

Matrix: Water

Analyte	Units	135740-003
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	115
Bromofluorobenzene	%REC	125

Lab #: 135740

BATCH QC REPORT



Curtis & Associates, Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

MB Lab ID: QC80860

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	104	59-162
Bromofluorobenzene	107	59-162



BTXE

Client: Subsurface Consultants	Analysis Method: EPA 8020A
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 09/25/98
Batch#: 43616	Analysis Date: 09/25/98
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC80860

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	104	53-124
Bromofluorobenzene	105	41-142



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 43616
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/25/98
 Analysis Date: 09/25/98

LCS Lab ID: QC80858

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1817	2000	91	80-119
Surrogate	%Rec	Limits		
Trifluorotoluene	137	59-162		
Bromofluorobenzene	123	59-162		

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



BTXE

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8020A
 Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
 Batch#: 43616
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/25/98
 Analysis Date: 09/25/98

LCS Lab ID: QC80859

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	15.48	20	77	69-109
Toluene	18.76	20	94	72-116
Ethylbenzene	20.37	20	102	67-120
m,p-Xylenes	41.43	40	104	69-117
o-Xylene	20.8	20	104	75-122
Surrogate	%Rec	Limits		
Trifluorotoluene	110	53-124		
Bromofluorobenzene	118	41-142		

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



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-34
Lab ID: 135740-003
Matrix: Water
Batch#: 43681
Units: ug/L
Diln Fac: 1

Sampled: 09/24/98
Received: 09/24/98
Extracted: 09/29/98
Analyzed: 10/07/98

Analyte	Result	Reporting Limit
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Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b,k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1,2,3-cd) pyrene	ND	10
Dibenz (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10

Surrogate	%Recovery	Recovery Limits
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Nitrobenzene-d5	71	36-115
2-Fluorobiphenyl	76	36-113
Terphenyl-d14	35	17-115

Lab #: 135740

BATCH QC REPORT



Curtis & Tompkins Ltd.

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 10/01/98

MB Lab ID: QC81105

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	67	36-115
2-Fluorobiphenyl	68	36-113
Terphenyl-d14	65	17-115



Polynuclear Aromatic Hydrocarbons by GC

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 09/29/98
Batch#: 43681	Analysis Date: 10/01/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81106

Analyte	Spike Added	BS	%Rec #	Limits
Acenaphthene	50	26.61	53	50-110
Pyrene	50	28.8	58	43-110
Surrogate	%Rec	Limits		
Nitrobenzene-d5	62	36-115		
2-Fluorobiphenyl	63	36-113		
Terphenyl-d14	73	17-115		

BSD Lab ID: QC81107

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Acenaphthene	50	28.95	58	50-110	8	18
Pyrene	50	31.27	63	43-110	8	19
Surrogate	%Rec	Limits				
Nitrobenzene-d5	66	36-115				
2-Fluorobiphenyl	66	36-113				
Terphenyl-d14	79	17-115				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits



Organochlorine Pesticides and PCBs

Curtis & Tompkins, Ltd.

Client: Subsurface Consultants	Analysis Method: EPA 8080	
Project#: 133.009	Prep Method: EPA 3520	
Location: KOT/9th Ave. Terminal		
Field ID: SCIMW-23	Sampled: 09/24/98	
Lab ID: 135740-002	Received: 09/24/98	
Matrix: Water	Extracted: 09/30/98	
Batch#: 43709	Analyzed: 10/12/98	
Units: ug/L		
Diln Fac: 1		
Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.09
4,4'-DDE	ND	0.09
Endrin	ND	0.09
Endosulfan II	ND	0.09
Endosulfan sulfate	ND	0.09
4,4'-DDD	ND	0.09
Endrin aldehyde	ND	0.09
4,4'-DDT	ND	0.09
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	0.9
Aroclor-1016	ND	0.5
Aroclor-1221	ND	0.9
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Recovery	Recovery Limits
TCMX	37	31-121
Decachlorobiphenyl	12*	30-145

* Values outside of QC limits

Lab #: 135740

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

METHOD BLANK

Matrix: Water	Prep Date: 09/30/98
Batch#: 43709	Analysis Date: 10/10/98
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC81206

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	89	31-121
Decachlorobiphenyl	78	30-145



EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/30/98
Batch#: 43709	Analysis Date: 10/10/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81207

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.5	100	62-131
Heptachlor	0.5	0.44	88	57-118
Aldrin	0.5	0.44	88	57-118
Dieldrin	1	0.45	90	62-123
Endrin	1	0.48	96	48-138
4,4'-DDT	1	0.48	96	56-121
Surrogate		%Rec		Limits
TCMX		119		31-121
Decachlorobiphenyl		84		30-145

BSD Lab ID: QC81208

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.49	98	62-131	2	28
Heptachlor	0.5	0.41	82	57-118	7	26
Aldrin	0.5	0.39	78	57-118	12	27
Dieldrin	1	0.43	86	62-123	5	24
Endrin	1	0.45	90	48-138	6	27
4,4'-DDT	1	0.44	88	56-121	9	26
Surrogate		%Rec		Limits		
TCMX		96		31-121		
Decachlorobiphenyl		68		30-145		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-34
LAB ID: 135740-003
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave. Terminal
MATRIX: Filtrate

DATE SAMPLED: 09/24/98
DATE RECEIVED: 09/24/98
DATE REPORTED: 11/05/98

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0	1	43674	EPA 6010A	10/01/98

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135740

 Curtis & Tompkins, Ltd.
DATE REPORTED: 11/05/98

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Lead	ND	3	ug/L	1	43674	EPA 6010A	09/30/98

ND = Not Detected at or above reporting limit



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 135740

DATE REPORTED: 11/05/98

BATCH QC REPORT
LABORATORY CONTROL SAMPLE

Compound	Spike Amt	Result	Units	% Rec.	QC Batch	Method	Analysis Date
Lead	500	557	ug/L	111	43674	EPA 6010A	09/30/98



Curtis & Tompkins, Ltd.

DATE REPORTED: 11/05/98

CLIENT: Subsurface Consultants
JOB NUMBER: 135740

**BATCH QC REPORT
MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

Compound	Sample	Sample Result	Spike Amount	MS Result	MSD Result	Units	MS% Rec.	MSD% Rec.	Rec. Limit	RPD %	RPD QC Lim	QC Batch	Method	Analysis Date
Lead	135660-002	<3.000	500	528	551	ug/L	106	110	65-135	4	35	43674	EPA 6010A	09/30/98

Total Dissolved Solids (TDS)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
135740-002	SCIMW-23	43724	24-SEP-98	02-OCT-98	-
135740-003	SCIMW-34	43724	24-SEP-98	02-OCT-98	-
QC81256	Method Blank	43724	-	02-OCT-98	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
135740-002	SCIMW-23	9940	33	3.3
135740-003	SCIMW-34	15000	100	10
QC81256	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit

Total Dissolved Solids (TDS)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC81257	SDUP of 135826-001	43724	29-SEP-98	02-OCT-98	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC81257	SDUP of 135826-001	768.0	2	25
135826-001	ZZZZZZZZ	756.0		



Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 135740
CLIENT: SUBSURFACE CONSULTANTS
PROJECT#: 133.009
LOCATION: KOT/9TH AVE. TERMINAL

DATE SAMPLED: 09/24/98
DATE RECEIVED: 09/24/98
DATE ANALYZED: 10/02/98
DATE REVISED: 12/08/98
QC BATCH#: 43762

=====
ANALYSIS: TOTAL ORGANIC CARBON *
METHOD REFERENCE: EPA 415.2
=====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
135740-002	SCIMW-23	8.3	mg/L	1.0
135740-003	SCIMW-34	12	mg/L	1.0
METHOD BLANK	N/A	ND	mg/L	1.0

ND = Not detected at or above the reporting limit.

* = All samples filtered prior to analysis.

QA/QC SUMMARY: MS/MSD OF SAMPLE NO:135740-002

RPD, %	2
RECOVERY, %	90

CHAIN OF CUSTODY FORM

135740

PAGE OF

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133.009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meg Mendoza / Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

ANALYSIS REQUESTED										
TVH/BTEX	TEHed (800m of silica gel)	Pesticides (8000)	TDS (160.1)	Distilled Organic Carbon (2000)	Lead (6010/7000)	SNO's 8270 (Filtered)	SNO's 8270 (unfiltered)			

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES	
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME		
	SC1MW-5	X						1					X		09	23	98	7000	* X	
-1	SC1MW-18	X						1					X		09	24	98	1400	X	
-2	SC1MW-23	X				2	3	2					X		09	24	98	1300	X	X
-3	SC1MW-34	X				4	5	2					X		09	24	98	1215	* X	X

Jeri Alexander
 9/24/98
 135740

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE / TIME 9/24/98 1450	RELEASED BY: (Signature) <i>Walter R. Sparks</i>	DATE / TIME 9/24/98 1455
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: * Please filter/fix before lead analysis.
 SC1MW-5 submitted yesterday (1 liter) without C.O.C.

SCI Subsurface Consultants, Inc.
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 06-NOV-98
Lab Job Number: 135711
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by: Frank B. B.

Reviewed by: [Signature]

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Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. TerminalAnalysis Method: EPA 8260
Prep Method: EPA 5030Field ID: SCIMW-22
Lab ID: 135711-006
Matrix: Water
Batch#: 43667
Units: ug/L
Diln Fac: 1Sampled: 09/23/98
Received: 09/23/98
Extracted: 09/29/98
Analyzed: 09/29/98

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	109	85-121
Toluene-d8	102	92-110
Bromofluorobenzene	102	84-115



Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. TerminalAnalysis Method: EPA 8260
Prep Method: EPA 5030Field ID: SCIMW-30
Lab ID: 135711-010
Matrix: Water
Batch#: 43667
Units: ug/L
Diln Fac: 1Sampled: 09/23/98
Received: 09/23/98
Extracted: 09/29/98
Analyzed: 09/29/98

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	109	85-121
Toluene-d8	101	92-110
Bromofluorobenzene	100	84-115

Lab #: 135711

BATCH QC REPORT

Curtis & Tompkins Ltd.
Page 1 of 1

EPA 8240 Volatile Organics

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8260
 Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
 Batch#: 43667
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 09/29/98

MB Lab ID: QC81074

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	5.0
1,1-Dichloroethane	ND	50
2-Butanone	ND	5.0
cis-1,2-Dichloroethene	ND	10
Chloroform	ND	5.0
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
4-Methyl-2-Pentanone	ND	5.0
cis-1,3-Dichloropropene	ND	10
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	5.0
Tetrachloroethene	ND	10
Dibromochloromethane	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	99	85-121
Toluene-d8	99	92-110
Bromofluorobenzene	101	84-115



EPA 8240 Volatile Organics

Client: Subsurface Consultants Analysis Method: EPA 8260
 Project#: 133.009 Prep Method: EPA 5030
 Location: KOT/9th Ave Terminal

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water Prep Date: 09/29/98
 Batch#: 43667 Analysis Date: 09/29/98
 Units: ug/L
 Diln Fac: 1

BS Lab ID: QC81045

Analyte	Spike Added	BS	%Rec #	Limits
1,1-Dichloroethene	50	45.88	92	69-137
Benzene	50	45.54	91	87-117
Trichloroethene	50	47.9	96	83-116
Toluene	50	48.49	97	88-116
Chlorobenzene	50	48.17	96	87-117
Surrogate				
			%Rec	Limits
1,2-Dichloroethane-d4			94	85-121
Toluene-d8			99	92-110
Bromofluorobenzene			96	84-115

BSD Lab ID: QC81046

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	47.5	95	69-137	3	14
Benzene	50	47.94	96	87-117	5	10
Trichloroethene	50	50.02	100	83-116	4	10
Toluene	50	49.76	100	88-116	3	10
Chlorobenzene	50	49.89	100	87-117	4	10
Surrogate						
			%Rec	Limits		
1,2-Dichloroethane-d4			95	85-121		
Toluene-d8			99	92-110		
Bromofluorobenzene			95	84-115		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135711-002	MW-5	43616	09/23/98	09/26/98	09/26/98	
135711-004	SCIMW-11	43616	09/23/98	09/26/98	09/26/98	

Matrix: Water

Analyte	Units	135711-002	135711-004
Diln Fac:		1	1
Gasoline C7-C12	ug/L	<50	<50
Surrogate			
Trifluorotoluene	%REC	113	113
Bromofluorobenzene	%REC	128	129



BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135711-002	MW-5	43616	09/23/98	09/26/98	09/26/98	
135711-004	SCIMW-11	43616	09/23/98	09/26/98	09/26/98	

Matrix: Water

Analyte	Units	135711-002	135711-004
Diln Fac:		1	1
Benzene	ug/L	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5
Ethylbenzene	ug/L	<0.5	<0.5
m,p-Xylenes	ug/L	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5
Surrogate			
Trifluorotoluene	%REC	110	112
Bromofluorobenzene	%REC	122	126

Lab #: 135711

BATCH QC REPORT



Curtis & Associates, Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

MB Lab ID: QC80860

Analyte	Result		
Gasoline C7-C12	<50		
Surrogate	%Rec		Recovery Limits
Trifluorotoluene	104		59-162
Bromofluorobenzene	107		59-162

Lab #: 135711

BATCH QC REPORT



Curtis & Associates, Ltd.

BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

MB Lab ID: QC80860

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	104	53-124
Bromofluorobenzene	105	41-142

Lab #: 135711

BATCH QC REPORT



Curtis Enterprises, Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 5030
Location: KOT/9th Ave.Terminal	

LABORATORY CONTROL SAMPLE

Matrix: Water	Prep Date: 09/25/98
Batch#: 43616	Analysis Date: 09/25/98
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC80858

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1817	2000	91	80-119
Surrogate	%Rec	Limits		
Trifluorotoluene	137	59-162		
Bromofluorobenzene	123	59-162		

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

Lab #: 135711

BATCH QC REPORT



Curtis Enterprises, Ltd.

BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

LCS Lab ID: QC80859

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	15.48	20	77	69-109
Toluene	18.76	20	94	72-116
Ethylbenzene	20.37	20	102	67-120
m,p-Xylenes	41.43	40	104	69-117
o-Xylene	20.8	20	104	75-122
Surrogate	%Rec	Limits		
Trifluorotoluene	110	53-124		
Bromofluorobenzene	118	41-142		

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



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135711-001	SCIMW-4	43836	09/23/98	10/06/98	10/24/98	
135711-002	MW-5	43836	09/23/98	10/06/98	10/24/98	
135711-003	SCIMW-6	43836	09/23/98	10/06/98	10/24/98	
135711-004	SCIMW-11	43836	09/23/98	10/06/98	10/24/98	

Matrix: Water

Analyte	Units	135711-001	135711-002	135711-003	135711-004
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	<50	170 L	<50	<50
Motor Oil C22-C50	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	88	96	98	94

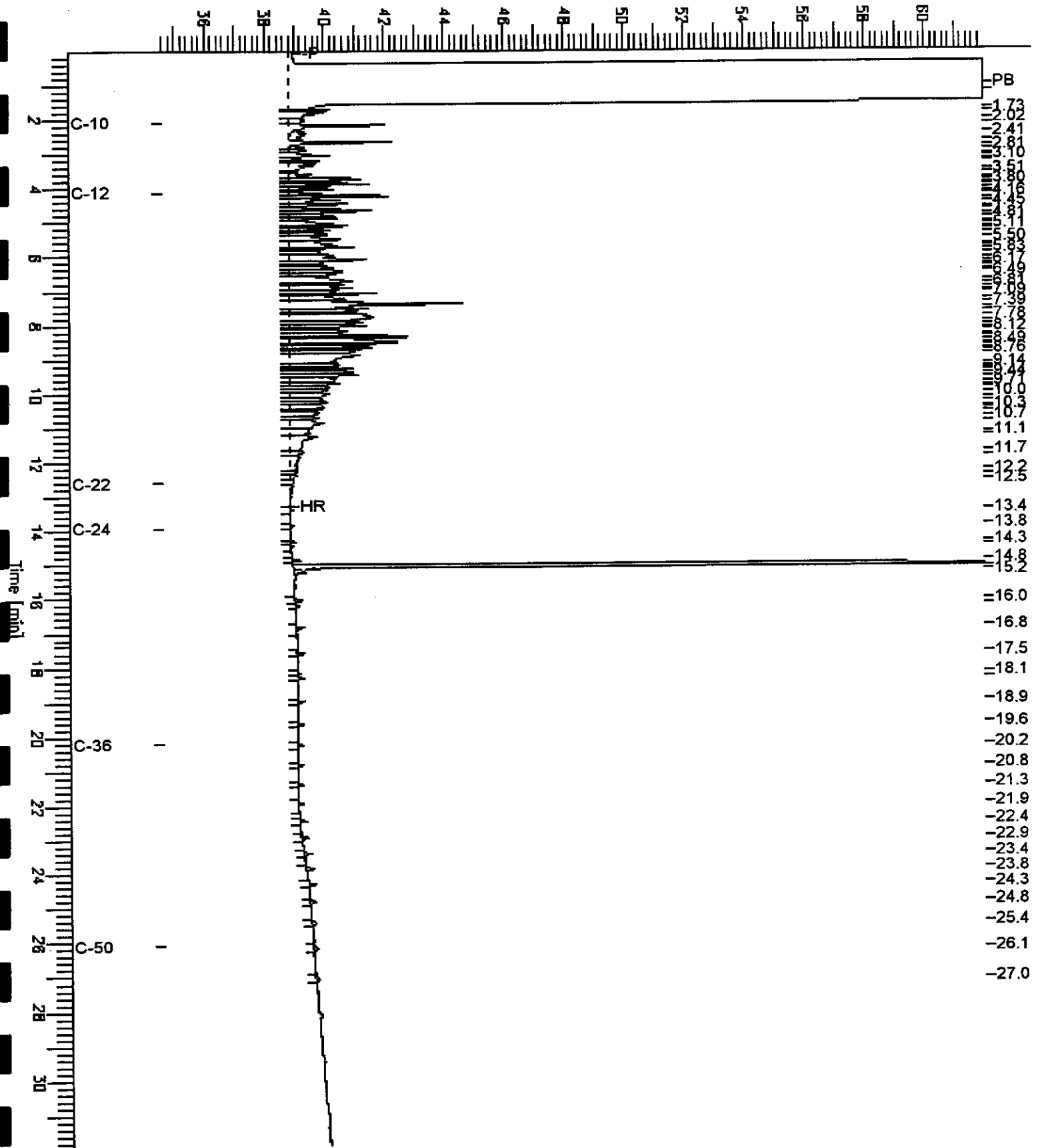
L: Lighter hydrocarbons than indicated standard

GC15 Channel B TEH

Sample Name : 135711-002,43836.sg
 FileName : C:\GC15\CHB\295B051.RAW
 Method : B299TEH.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

Sample #: 43836
 Date : 10/26/98 05:58 PM
 Time of Injection: 10/24/98 05:47 AM
 Low Point : 34.59 mV
 Plot Scale: 27.4 mV

Page 1 of 1
 High Point : 61.99 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
 Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135711-005	SCIMW-21	43836	09/23/98	10/06/98	10/24/98	
135711-007	SCIMW-20	43836	09/22/98	10/06/98	10/24/98	
135711-008	SCIMW-35	43836	09/23/98	10/06/98	10/24/98	
135711-009	MW-2	43836	09/23/98	10/06/98	10/24/98	

Matrix: Water

Analyte	Units	135711-005	135711-007	135711-008	135711-009
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	<50	<50	<50	80 YL
Motor Oil C22-C50	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	87	99	87	91

Y: Sample exhibits fuel pattern which does not resemble standard

L: Lighter hydrocarbons than indicated standard

GC15 Channel B Surrogate

Sample Name : 135711-009,43836,sg

Sample #: 43836

Page 1 of 1

FileName : C:\GC15\CHRB\295B060.raw

Date : 10/24/98 12:43 PM

Method : SINGL

Time of Injection: 10/24/98 12:11 PM

Start Time : 0.00 min

End Time : 31.90 min

Low Point : 32.00 mV

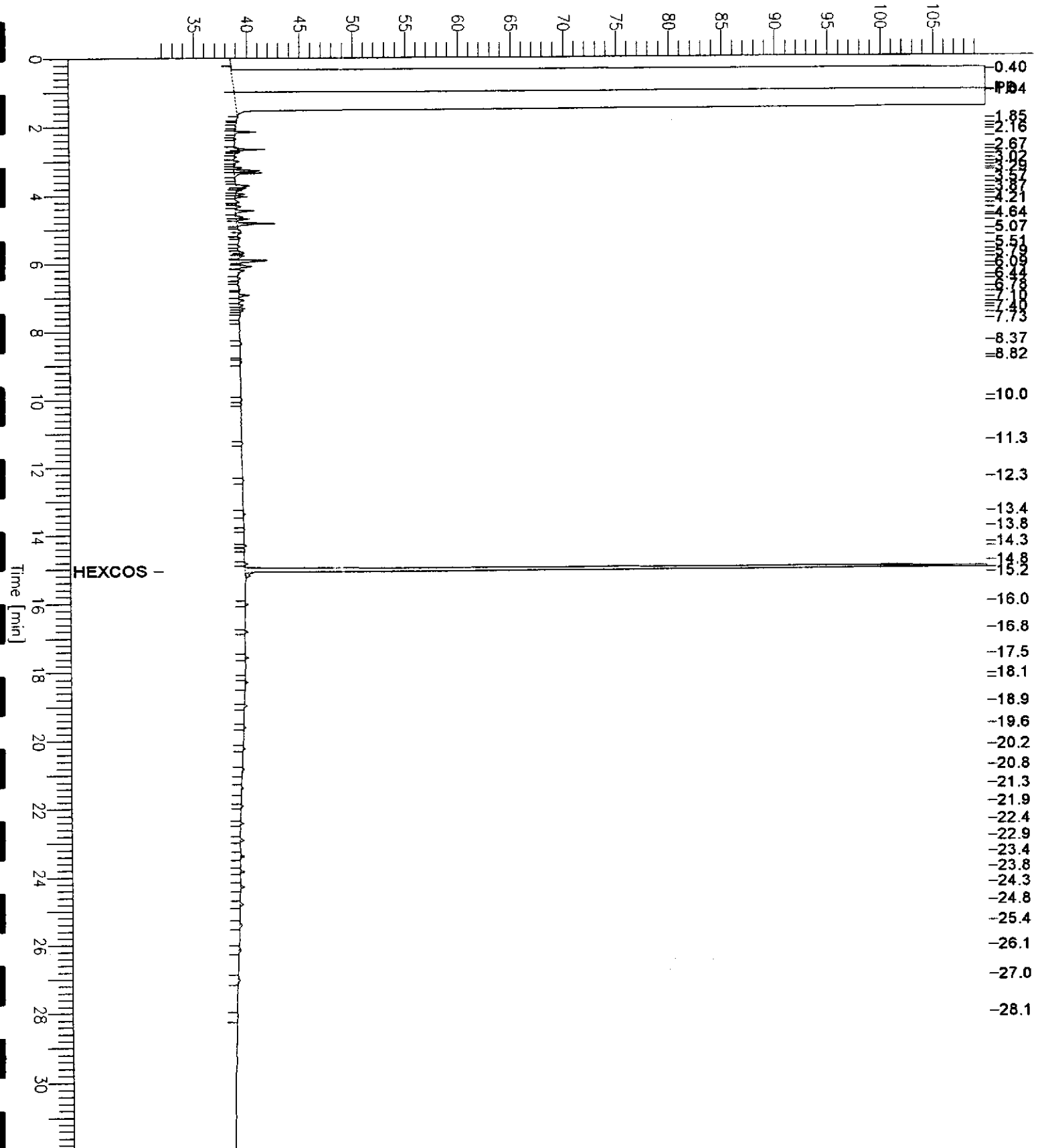
High Point : 110.00 mV

Scale Factor: 0.0

Plot Offset: 32 mV

Plot Scale: 78.0 mV

Response [mV]





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135711-010	SCIMW-30	43836	09/23/98	10/06/98	10/24/98	
135711-011	SCIMW-5	43836	09/23/98	10/06/98	10/24/98	

Matrix: Water

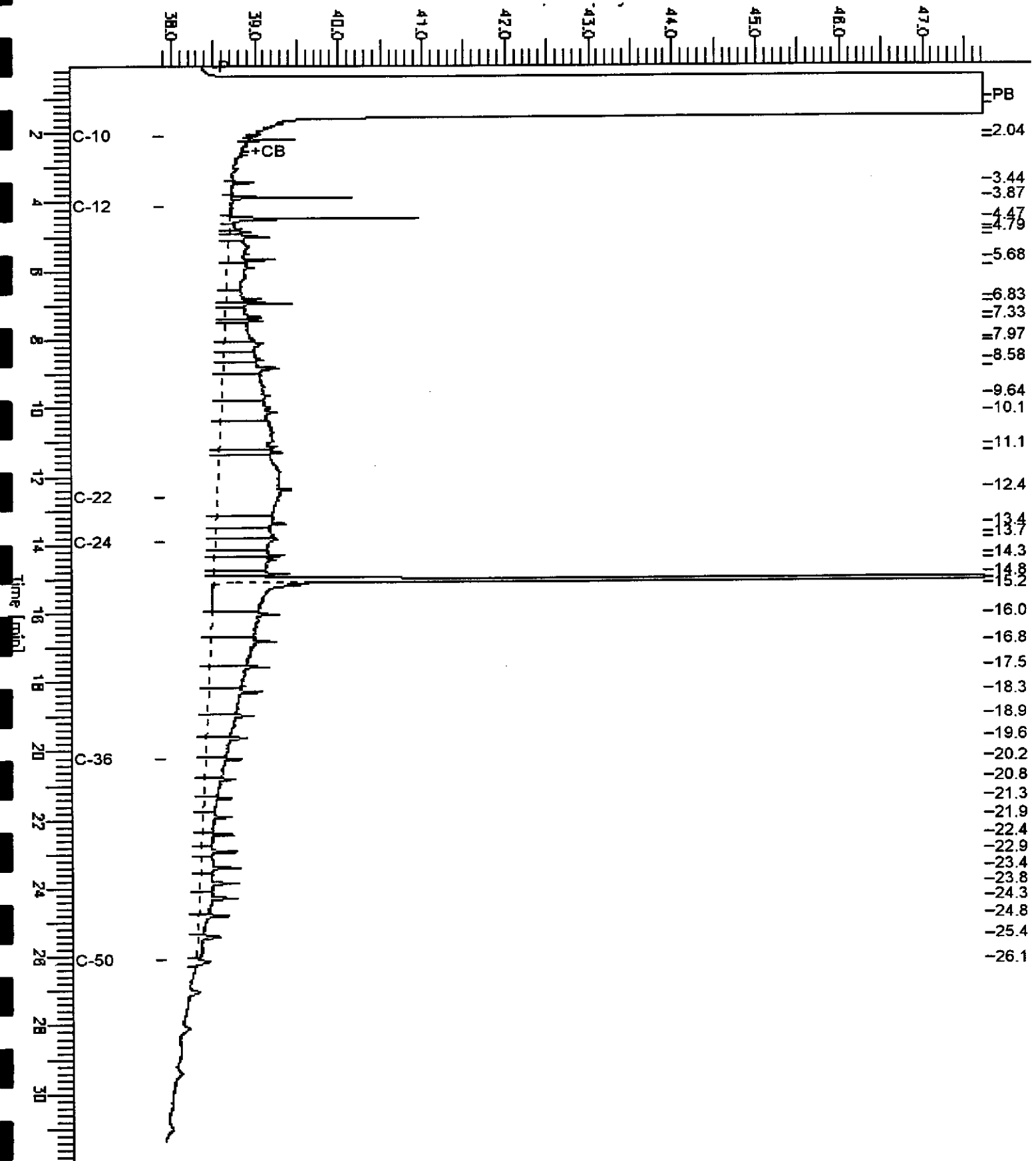
Analyte	Units	135711-010	135711-011
Diln Fac:		1	1
Diesel C12-C22	ug/L	60 Y	70 Y
Motor Oil C22-C50	ug/L	<300	<300
Surrogate			
Hexacosane	%REC	90	78

Y: Sample exhibits fuel pattern which does not resemble standard

GC15 Channel B TEH

Sample Name : 135711-010,43836,sg
 FileName : C:\GC15\CHB\295B061.RAW
 Method : B299TEH.MTH
 Start Time : 0.05 min
 Scale Factor: 0.0

Sample #: 43836
 Date : 10/28/98 05:22 PM
 Time of Injection: 10/24/98 12:53 PM
 Low Point : 37.90 mV
 High Point : 47.73 mV
 Plot Offset: 38 mV
 Plot Scale: 9.8 mV

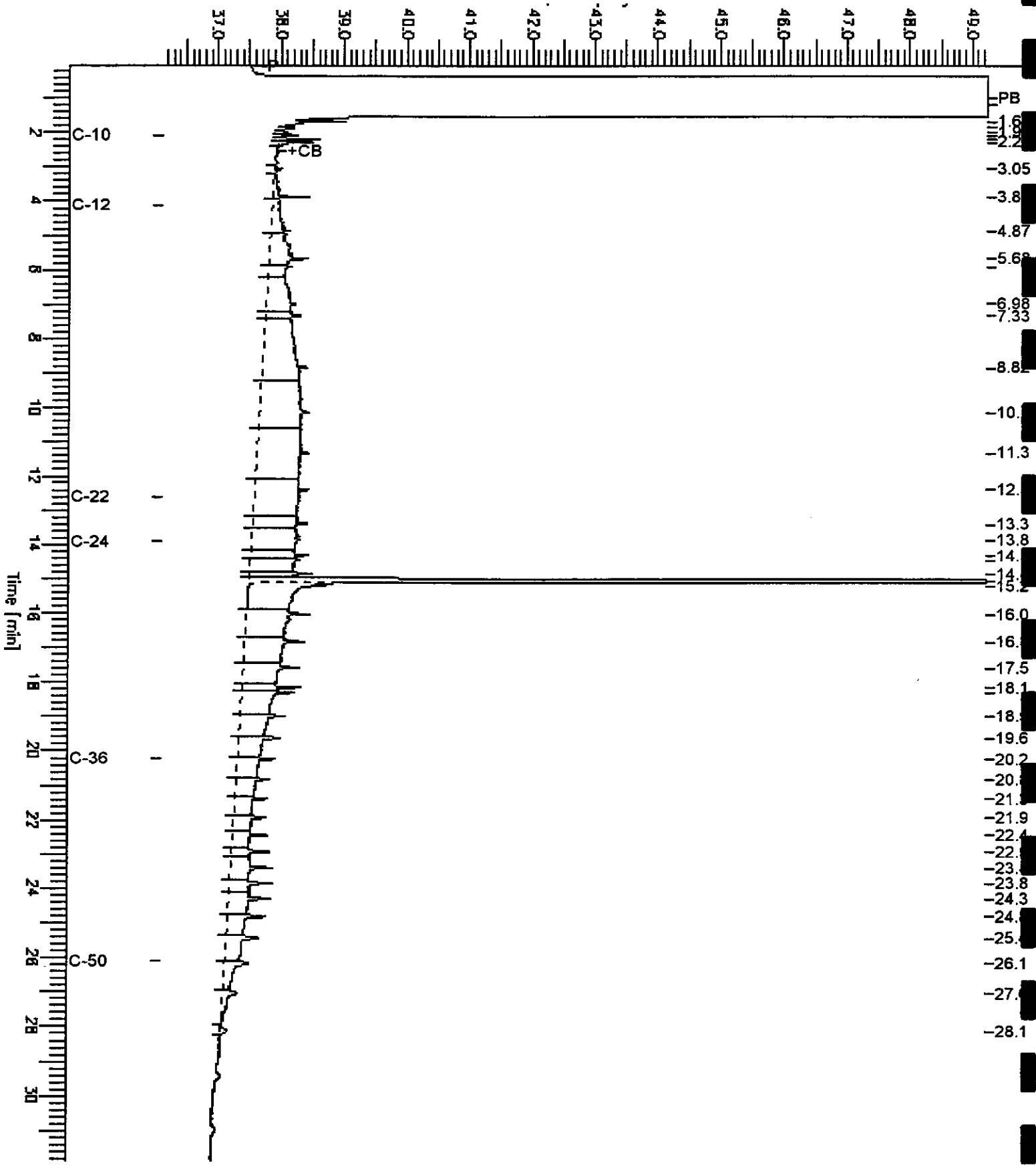


GC15 Channel B TEH

Sample Name : 135711-011,43836,sg
 FileName : C:\GC15\CHB\295B062.RAW
 Method : B299TEH.MTH
 Start Time : 0.05 min
 Scale Factor: 0.0

End Time : 31.91 min
 Plot Offset: 36 mV

Sample #: 43836
 Date : 10/28/98 05:22 PM
 Time of Injection: 10/24/98 01:36 PM
 Low Point : 36.11 mV
 High Point : 49.26 mV
 Plot Scale: 13.1 mV



Chromatogram

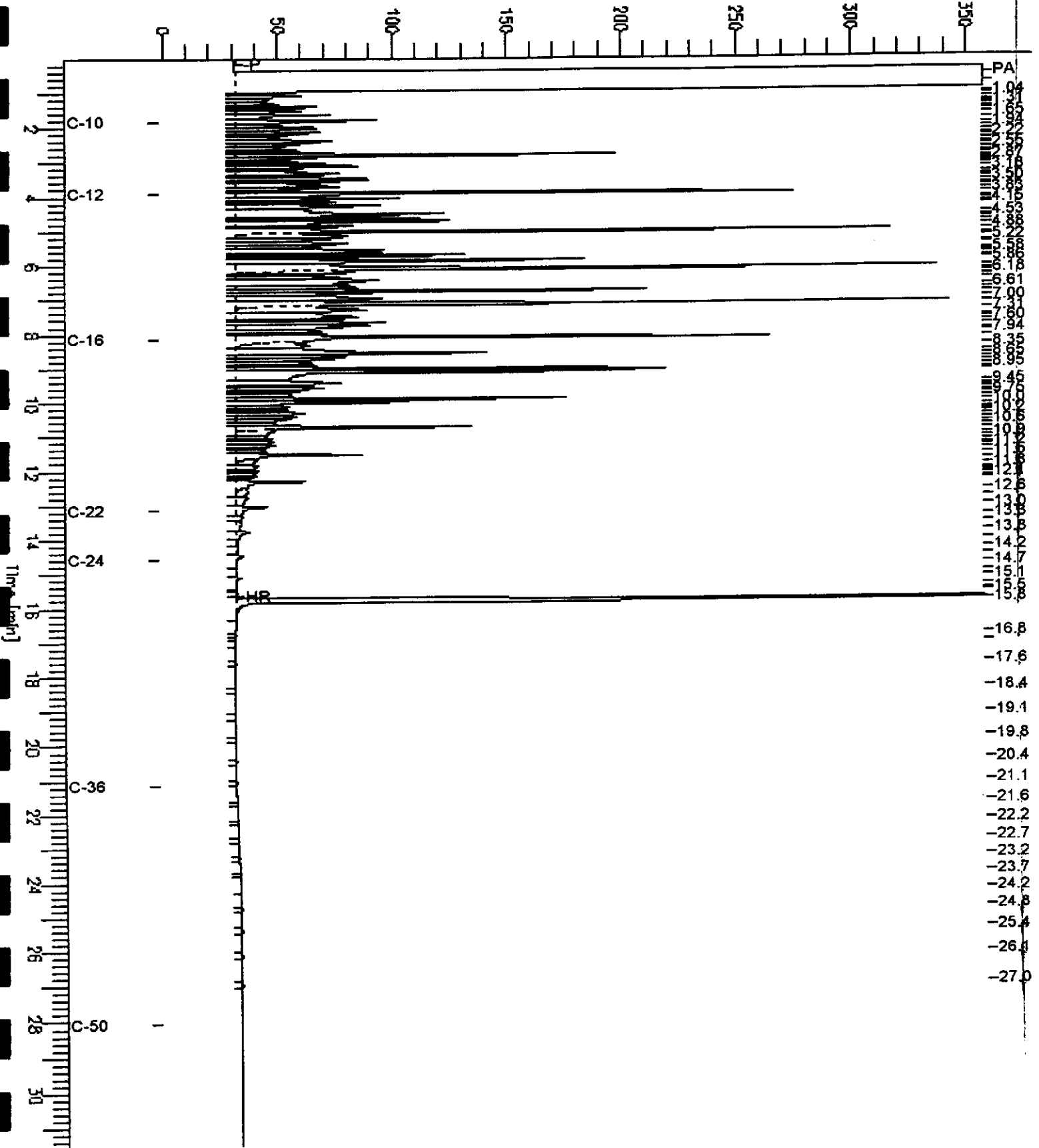
Sample Name : CCV,98WS6585,DS
FileName : C:\GC13\CHB\287B001.RAW
Method : BTEH280.MTH
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.57 min
Plot Offset : -2 mV

Sample #: 500MG/L
Date : 10/14/98 02:14 PM
Time of Injection: 10/14/98 01:38 PM
Low Point : -2.01 mV
Plot Scale: 359.6 mV
High Point : 357.62 mV

Page 1 of 1

Response [mV]



Lab #: 135711

BATCH QC REPORT



Page 1 of 1
Curtis & Jennings Ltd.

TEH-Tot. Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 43836
Units: ug/L
Diln Fac: 1

Prep Date: 10/06/98
Analysis Date: 10/15/98

MB Lab ID: QC81669

Analyte	Result	
Diesel C12-C22	<50	
Motor Oil C22-C50	<300	
Surrogate	%Rec	Recovery Limits
Hexacosane	95	53-136

Lab #: 135711

BATCH QC REPORT



Curtis & Jenkins Ltd.

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43836
Units: ug/L
Diln Fac: 1

Prep Date: 10/06/98
Analysis Date: 10/15/98

BS Lab ID: QC81670

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2500	1647	67	58-110
Surrogate	%Rec	Limits		
Hexacosane	99	53-136		

BSD Lab ID: QC81671

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2500	1548	63	58-110	0	21
Surrogate	%Rec	Limits				
Hexacosane	89	53-136				

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



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

Field ID: SCIMW-6	Sampled: 09/23/98
Lab ID: 135711-003	Received: 09/23/98
Matrix: Water	Extracted: 09/29/98
Batch#: 43681	Analyzed: 10/06/98
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Naphthalene	ND	9.5
Acenaphthylene	ND	9.5
Acenaphthene	ND	9.5
Fluorene	ND	9.5
Phenanthrene	ND	9.5
Anthracene	ND	9.5
Fluoranthene	ND	9.5
Pyrene	ND	9.5
Benzo (a) anthracene	ND	9.5
Chrysene	ND	9.5
Benzo (b, k) fluoranthene	ND	9.5
Benzo (a) pyrene	ND	9.5
Indeno (1, 2, 3-cd) pyrene	ND	9.5
Dibenz (a, h) anthracene	ND	9.5
Benzo (g, h, i) perylene	ND	9.5

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	62	36-115
2-Fluorobiphenyl	65	36-113
Terphenyl-d14	58	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-11
Lab ID: 135711-004
Matrix: Water
Batch#: 43681
Units: ug/L
Diln Fac: 1

Sampled: 09/23/98
Received: 09/23/98
Extracted: 09/29/98
Analyzed: 10/06/98

Analyte	Result	Reporting Limit
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Naphthalene	ND	9.6
Acenaphthylene	ND	9.6
Acenaphthene	ND	9.6
Fluorene	ND	9.6
Phenanthrene	ND	9.6
Anthracene	ND	9.6
Fluoranthene	ND	9.6
Pyrene	ND	9.6
Benzo (a) anthracene	ND	9.6
Chrysene	ND	9.6
Benzo (b, k) fluoranthene	ND	9.6
Benzo (a) pyrene	ND	9.6
Indeno (1, 2, 3- cd) pyrene	ND	9.6
Dibenz (a, h) anthracene	ND	9.6
Benzo (g, h, i) perylene	ND	9.6

Surrogate	%Recovery	Recovery Limits
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Nitrobenzene-d5	68	36-115
2-Fluorobiphenyl	69	36-113
Terphenyl-d14	55	17-115

Lab #: 135711

BATCH QC REPORT



Curtis & Jenkins Ltd.

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 10/01/98

MB Lab ID: QC81105

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	67	36-115
2-Fluorobiphenyl	68	36-113
Terphenyl-d14	65	17-115

Lab #: 135711

BATCH QC REPORT



Polynuclear Aromatic Hydrocarbons by GC

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 43681
Units: ug/L
Diln Fac: 1

Prep Date: 09/29/98
Analysis Date: 10/01/98

BS Lab ID: QC81106

Analyte	Spike Added	BS	%Rec	#	Limits
Acenaphthene	50	26.61	53		50-110
Pyrene	50	28.8	58		43-110
Surrogate	%Rec	Limits			
Nitrobenzene-d5	62	36-115			
2-Fluorobiphenyl	63	36-113			
Terphenyl-d14	73	17-115			

BSD Lab ID: QC81107

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Acenaphthene	50	28.95	58		50-110	8	18
Pyrene	50	31.27	63		43-110	8	19
Surrogate	%Rec	Limits					
Nitrobenzene-d5	66	36-115					
2-Fluorobiphenyl	66	36-113					
Terphenyl-d14	79	17-115					

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
Field ID: SCIMW-6	Sampled: 09/23/98
Lab ID: 135711-003	Received: 09/23/98
Matrix: Filtrate	Extracted: 09/29/98
Batch#: 43681	Analyzed: 10/07/98
Units: ug/L	
Diln Fac: 1	

Analyte	Result	Reporting Limit
Naphthalene	ND	9.5
Acenaphthylene	ND	9.5
Acenaphthene	ND	9.5
Fluorene	ND	9.5
Phenanthrene	ND	9.5
Anthracene	ND	9.5
Fluoranthene	ND	9.5
Pyrene	ND	9.5
Benzo (a) anthracene	ND	9.5
Chrysene	ND	9.5
Benzo (b, k) fluoranthene	ND	9.5
Benzo (a) pyrene	ND	9.5
Indeno (1, 2, 3-cd) pyrene	ND	9.5
Dibenz (a, h) anthracene	ND	9.5
Benzo (g, h, i) perylene	ND	9.5

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	72	36-115
2-Fluorobiphenyl	62	36-113
Terphenyl-d14	59	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

Field ID: SCIMW-11
 Lab ID: 135711-004
 Matrix: Filtrate
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Sampled: 09/23/98
 Received: 09/23/98
 Extracted: 09/29/98
 Analyzed: 10/03/98

Analyte	Result	Reporting Limit
Naphthalene	ND	9.6
Acenaphthylene	ND	9.6
Acenaphthene	ND	9.6
Fluorene	ND	9.6
Phenanthrene	ND	9.6
Anthracene	ND	9.6
Fluoranthene	ND	9.6
Pyrene	ND	9.6
Benzo (a) anthracene	ND	9.6
Chrysene	ND	9.6
Benzo (b, k) fluoranthene	ND	9.6
Benzo (a) pyrene	ND	9.6
Indeno (1, 2, 3-cd) pyrene	ND	9.6
Dibenz (a, h) anthracene	ND	9.6
Benzo (g, h, i) perylene	ND	9.6

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	70	36-115
2-Fluorobiphenyl	78	36-113
Terphenyl-d14	85	17-115

Lab #: 135711

BATCH QC REPORT



Curtis & Jenkins Ltd.

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43681
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/29/98
 Analysis Date: 10/01/98

MB Lab ID: QC81105

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	67	36-115
2-Fluorobiphenyl	68	36-113
Terphenyl-d14	65	17-115



Polynuclear Aromatic Hydrocarbons by GC

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 09/29/98
Batch#: 43681	Analysis Date: 10/01/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81106

Analyte	Spike Added	BS	%Rec	#	Limits
Acenaphthene	50	26.61	53		50-110
Pyrene	50	28.8	58		43-110
Surrogate	%Rec	Limits			
Nitrobenzene-d5	62	36-115			
2-Fluorobiphenyl	63	36-113			
Terphenyl-d14	73	17-115			

BSD Lab ID: QC81107

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Acenaphthene	50	28.95	58		50-110	8	18
Pyrene	50	31.27	63		43-110	8	19
Surrogate	%Rec	Limits					
Nitrobenzene-d5	66	36-115					
2-Fluorobiphenyl	66	36-113					
Terphenyl-d14	79	17-115					

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits



Organochlorine Pesticides and PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

Field ID: SCIMW-6
 Lab ID: 135711-003
 Matrix: Water
 Batch#: 43657
 Units: ug/L
 Diln Fac: 1

Sampled: 09/23/98
 Received: 09/23/98
 Extracted: 09/28/98
 Analyzed: 10/03/98

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.09
4,4'-DDE	ND	0.09
Endrin	ND	0.09
Endosulfan II	ND	0.09
Endosulfan sulfate	ND	0.09
4,4'-DDD	ND	0.09
Endrin aldehyde	ND	0.09
4,4'-DDT	ND	0.09
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	0.9
Aroclor-1016	ND	0.5
Aroclor-1221	ND	0.9
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Recovery	Recovery Limits
TCMX	76	31-121
Decachlorobiphenyl	27*	30-145

* Values outside of QC limits

Lab #: 135711

BATCH QC REPORT



Curtis Laboratories, Ltd.

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43657
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/28/98
 Analysis Date: 10/10/98

MB Lab ID: QC81014

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	83	31-121
Decachlorobiphenyl	85	30-145

Lab #: 135711

BATCH QC REPORT



Curtis Laboratories Ltd.

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/28/98
Batch#: 43657	Analysis Date: 10/10/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81015

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.52	104	62-131
Heptachlor	0.5	0.49	98	57-118
Aldrin	0.5	0.41	82	57-118
Dieldrin	0.5	0.47	94	62-123
Endrin	0.5	0.48	96	48-138
4,4'-DDT	0.5	0.46	92	56-121
Surrogate	%Rec	Limits		
TCMX	103	31-121		
Decachlorobiphenyl	58	30-145		

BSD Lab ID: QC81016

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.52	104	62-131	0	28
Heptachlor	0.5	0.49	98	57-118	0	26
Aldrin	0.5	0.4	80	57-118	2	27
Dieldrin	0.5	0.45	90	62-123	4	24
Endrin	0.5	0.48	96	48-138	0	27
4,4'-DDT	0.5	0.45	90	56-121	2	26
Surrogate	%Rec	Limits				
TCMX	95	31-121				
Decachlorobiphenyl	80	30-145				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-6
LAB ID: 135711-003
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave. Terminal
MATRIX: Filtrate

DATE SAMPLED: 09/23/98
DATE RECEIVED: 09/23/98
DATE REPORTED: 11/05/98

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	43674	EPA 6010A	09/30/98
Arsenic	ND	5.0	1	43674	EPA 6010A	09/30/98
Barium	73	10	1	43674	EPA 6010A	09/30/98
Beryllium	2.5	2.0	1	43674	EPA 6010A	09/30/98
Cadmium	ND	5.0	1	43674	EPA 6010A	09/30/98
Chromium (total)	ND	10	1	43674	EPA 6010A	09/30/98
Cobalt	ND	20	1	43674	EPA 6010A	09/30/98
Copper	290	10	1	43674	EPA 6010A	09/30/98
Lead	ND	3.0	1	43674	EPA 6010A	09/30/98
Mercury	ND	0.20	1	43738	EPA 7470	10/02/98
Molybdenum	ND	20	1	43674	EPA 6010A	09/30/98
Nickel	ND	20	1	43674	EPA 6010A	09/30/98
Selenium	ND	5.0	1	43674	EPA 6010A	09/30/98
Silver	ND	5.0	1	43674	EPA 6010A	09/30/98
Thallium	ND	5.0	1	43674	EPA 6010A	09/30/98
Vanadium	ND	10	1	43674	EPA 6010A	09/30/98
Zinc	80	20	1	43674	EPA 6010A	09/30/98

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-11
LAB ID: 135711-004
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave.Terminal
MATRIX: Filtrate

DATE SAMPLED: 09/23/98
DATE RECEIVED: 09/23/98
DATE REPORTED: 11/05/98

California TITLE 26 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	43674	EPA 6010A	09/30/98
Arsenic	ND	5.0	1	43674	EPA 6010A	09/30/98
Barium	180	10	1	43674	EPA 6010A	09/30/98
Beryllium	ND	2.0	1	43674	EPA 6010A	09/30/98
Cadmium	ND	5.0	1	43674	EPA 6010A	09/30/98
Chromium (total)	ND	10	1	43674	EPA 6010A	09/30/98
Cobalt	ND	20	1	43674	EPA 6010A	09/30/98
Copper	ND	10	1	43674	EPA 6010A	09/30/98
Lead	ND	3.0	1	43674	EPA 6010A	09/30/98
Mercury	ND	0.20	1	43738	EPA 7470	10/02/98
Molybdenum	ND	20	1	43674	EPA 6010A	09/30/98
Nickel	ND	20	1	43674	EPA 6010A	09/30/98
Selenium	ND	5.0	1	43674	EPA 6010A	09/30/98
Silver	ND	5.0	1	43674	EPA 6010A	09/30/98
Thallium	ND	5.0	1	43674	EPA 6010A	09/30/98
Vanadium	ND	10	1	43674	EPA 6010A	09/30/98
Zinc	ND	20	1	43674	EPA 6010A	09/30/98

ND = Not detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135711

DATE REPORTED: 11/05/98

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60 ug/L	1	43674	EPA 6010A	09/30/98
Arsenic	ND	5 ug/L	1	43674	EPA 6010A	09/30/98
Barium	ND	10 ug/L	1	43674	EPA 6010A	09/30/98
Beryllium	ND	2 ug/L	1	43674	EPA 6010A	09/30/98
Cadmium	ND	5 ug/L	1	43674	EPA 6010A	09/30/98
Chromium (total)	ND	10 ug/L	1	43674	EPA 6010A	09/30/98
Cobalt	ND	20 ug/L	1	43674	EPA 6010A	09/30/98
Copper	ND	10 ug/L	1	43674	EPA 6010A	09/30/98
Lead	ND	3 ug/L	1	43674	EPA 6010A	09/30/98
Mercury	ND	0.2 ug/L	1	43738	EPA 7470	10/02/98
Molybdenum	ND	20 ug/L	1	43674	EPA 6010A	09/30/98
Nickel	ND	20 ug/L	1	43674	EPA 6010A	09/30/98
Selenium	ND	5 ug/L	1	43674	EPA 6010A	09/30/98
Silver	ND	5 ug/L	1	43674	EPA 6010A	09/30/98
Thallium	ND	5 ug/L	1	43674	EPA 6010A	09/30/98
Vanadium	ND	10 ug/L	1	43674	EPA 6010A	09/30/98
Zinc	ND	20 ug/L	1	43674	EPA 6010A	09/30/98

ND = Not Detected at or above reporting limit

CLIENT: Subsurface Consultants
JOB NUMBER: 135711

 Curtis & Tompkins, Ltd.
DATE REPORTED: 11/05/98

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Mercury	5	4.898	4.807	ug/L	98	96	80-120	2	35	43738	EPA 7470	10/02/98

CLIENT: Subsurface Consultants
JOB NUMBER: 135711BATCH QC REPORT
LABORATORY CONTROL SAMPLE

Compound	Spike Amt	Result	Units	% Rec.	QC Batch	Method	Analysis Date
Antimony	500	448	ug/L	90	43674	EPA 6010A	09/30/98
Arsenic	2000	2220	ug/L	111	43674	EPA 6010A	09/30/98
Barium	2000	2290	ug/L	115	43674	EPA 6010A	09/30/98
Beryllium	50	56.5	ug/L	113	43674	EPA 6010A	09/30/98
Cadmium	50	58.9	ug/L	118	43674	EPA 6010A	09/30/98
Chromium (total)	200	221	ug/L	111	43674	EPA 6010A	09/30/98
Cobalt	500	560	ug/L	112	43674	EPA 6010A	09/30/98
Copper	250	280	ug/L	112	43674	EPA 6010A	09/30/98
Lead	500	557	ug/L	111	43674	EPA 6010A	09/30/98
Molybdenum	400	460	ug/L	115	43674	EPA 6010A	09/30/98
Nickel	500	580	ug/L	116	43674	EPA 6010A	09/30/98
Selenium	2000	2230	ug/L	112	43674	EPA 6010A	09/30/98
Silver	100	114	ug/L	114	43674	EPA 6010A	09/30/98
Thallium	2000	2400	ug/L	120	43674	EPA 6010A	09/30/98
Vanadium	500	557	ug/L	111	43674	EPA 6010A	09/30/98
Zinc	500	565	ug/L	113	43674	EPA 6010A	09/30/98



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 135711

DATE REPORTED: 11/05/98

BATCH QC REPORT
MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Compound	Sample	Sample Result	Spike Amount	MS Result	MSD Result	Units	MS% Rec.	MSD% Rec.	Rec. RPD Limit	RPD QC %	RPD QC Lim	Method	Analysis Date
Antimony	135660-002	<60.000	500	483	532	ug/L	97	106	65-135	10	35	43674	EPA 6010A 09/30/98
Arsenic	135660-002	<5.000	2000	2200	2260	ug/L	110	113	65-135	3	35	43674	EPA 6010A 09/30/98
Barium	135660-002	150	2000	2390	2430	ug/L	112	114	65-135	2	35	43674	EPA 6010A 09/30/98
Beryllium	135660-002	<2.000	50	52.9	55	ug/L	106	110	65-135	4	35	43674	EPA 6010A 09/30/98
Cadmium	135660-002	<5.000	50	55.5	57.2	ug/L	111	114	65-135	3	35	43674	EPA 6010A 09/30/98
Chromium (total)	135660-002	<10.000	200	214	223	ug/L	107	112	65-135	4	35	43674	EPA 6010A 09/30/98
Cobalt	135660-002	<20.000	500	520	543	ug/L	104	109	65-135	4	35	43674	EPA 6010A 09/30/98
Copper	135660-002	<10.000	250	291	297	ug/L	116	119	65-135	2	35	43674	EPA 6010A 09/30/98
Lead	135660-002	<3.000	500	528	551	ug/L	106	110	65-135	4	35	43674	EPA 6010A 09/30/98
Mercury	135806-001	<0.200	5	4.716	4.355	ug/L	94	87	65-135	8	35	43738	EPA 7470 10/02/98
Molybdenum	135660-002	<20.000	400	433	453	ug/L	108	113	65-135	5	35	43674	EPA 6010A 09/30/98
Nickel	135660-002	<20.000	500	564	583	ug/L	113	117	65-135	3	35	43674	EPA 6010A 09/30/98
Selenium	135660-002	<5.000	2000	2250	2320	ug/L	113	116	65-135	3	35	43674	EPA 6010A 09/30/98
Silver	135660-002	<5.000	100	111	113	ug/L	111	113	65-135	2	35	43674	EPA 6010A 09/30/98
Thallium	135660-002	<5.000	2000	2370	2430	ug/L	119	122	65-135	3	35	43674	EPA 6010A 09/30/98
Vanadium	135660-002	<10.000	500	541	559	ug/L	108	112	65-135	3	35	43674	EPA 6010A 09/30/98
Zinc	135660-002	<20.000	500	563	579	ug/L	113	116	65-135	3	35	43674	EPA 6010A 09/30/98



Total Dissolved Solids (TDS)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
135711-003	SCIMW-6	43665	23-SEP-98	28-SEP-98	-
135711-004	SCIMW-11	43665	23-SEP-98	28-SEP-98	-
QC81038	Method Blank	43665	-	28-SEP-98	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
135711-003	SCIMW-6	24800	100	10
135711-004	SCIMW-11	7260	25	2.5
QC81038	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit



Total Dissolved Solids (TDS)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC81039	SDUP of 135717-012	43665	22-SEP-98	28-SEP-98	-

Analyte: Total Dissolved Solids Matrix: Water Units: mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC81039	SDUP of 135717-012	1644	0	25
135717-012	ZZZZZZZZ	1652		

Total Organic Carbon (TOC)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 415.2
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
135711-003	SCIMW-6	43650	23-SEP-98	28-SEP-98	-
135711-004	SCIMW-11	43650	23-SEP-98	28-SEP-98	-
QC80994	Method Blank	43650	-	28-SEP-98	-

Analyte: Total Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
135711-003	SCIMW-6	ND	1.0	1
135711-004	SCIMW-11	6.3	1.0	1
QC80994	Method Blank	ND	1.0	1

ND = None Detected at or above Reporting Limit



Total Organic Carbon (TOC)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 415.2
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC80995	Lab Control Sample	43650	-	28-SEP-98	-

Analyte: Total Organic Carbon **Matrix:** Water **Units:** mg/L

Sample #	Sample Type	Spike Amt.	Result	%Recovery	Limits
QC80995	Lab Control Sample	10.00	9.000	90	80-120

Total Organic Carbon (TOC)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave. Terminal

Analysis Method: EPA 415.2
Prep Method: EPA 415.2

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC80996	MS of 135711-004	43650	23-SEP-98	28-SEP-98	-
QC80997	MSD of 135711-004	43650	23-SEP-98	28-SEP-98	-

Analyte: Total Organic Carbon

Matrix: Water

Units: mg/L

Sample #	Client ID	Spikeamt	Result	%Rec	Limits	%RPD	Limit
QC80996	MS of 135711-004	10.00	15.40	91	75-125		
QC80997	MSD of 135711-004	10.00	16.00	97	75-125	4	35
135711-004	SCIMW-11		6.300				



Curtis & Tompkins, Ltd.

Client: Subsurface Consultants

Laboratory Login Number: 135711

Project Name: KOT/9th Ave. Terminal

Report Date: 05 November 98

Project Number: 133.009

ANALYSIS: pH

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	Method	Analyst	QC Batch
135711-005	SCIMW-21	Water	23-SEP-98	23-SEP-98	23-SEP-98	6.9	SU	EPA 9040	HDD	43577



Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: KOT/9th Ave. Terminal
Project Number: 133.009

Laboratory Login Number: 135711
Report Date: 05 November 98

ANALYSIS: pH

QC Batch Number: 43577

Calibration Verification Results

Sample	Result	TV	Difference	Limit	Analyzed
ICV	7.02	7.00	.02	< 0.10	23-SEP-98
CCV	7.03	7.00	.03	< 0.10	23-SEP-98
CCV	7.02	7.00	.02	< 0.10	23-SEP-98

Sample Duplicate Results

Sample	Duplicate	RPD	Analyzed
7.17	7.19	.3%	23-SEP-98

CHAIN OF CUSTODY FORM

135711

PAGE _____ OF _____

PROJECT NAME: 9th Ave Terminal
 JOB NUMBER: 133.009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Mag Mendoza / Jani Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Mag Mendoza

ANALYSIS REQUESTED											
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TEHed (8015m) w/ silica gel clean-up	TYH/BTNE (8015/8022)	VOCs (8260/8240 list)	SUOCs (8270 filtered)	SPECs (8270 w/ H ₂ O)	Pesticides (8080)	Heavy Metals (6010/700)	TDS (100.1)	Dissolved Organic Carbon (2000)			

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME	
-1	SCIMW-4	X					1						X		09	23	98	0930	X
-2	MW-5	X				4	1			X			X					0900	X
-3	SCIMW-6	X					6	2		X			X					1030	X
-4	SCIMW-11	X				4	5	2					X					1230	X
-5	SCIMW-21	X					2						X					0945	X
-6	SCIMW-22	X				4							X		09	23	98	1215	X
-7	SCIMW-20	X					1						X		09	22	98	0830	X
-8	SCIMW-35	X					1						X		09	23	98	1245	X
-9	MW-2	X					1						X		09	23	98	0830	X
-10	SCIMW-30	X				4	1						X		09	22	98	0830	X
-11	SCIMW-5																		

Metals

X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <i>D. Alexander</i>	DATE / TIME 9/23/98 1425	RELEASED BY: (Signature) <i>Anna Vigilante</i>	DATE / TIME 9/23/98 1435
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: * Please filter/fix before metals analysis.



Subsurface Consultants, Inc.
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

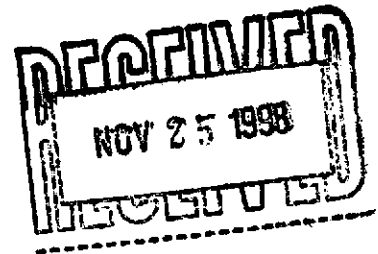
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 20-NOV-98
Lab Job Number: 135907
Project ID: 133.009
Location: KOT/9th Ave.Terminal



Reviewed by:

Troy Bohn

Reviewed by:

[Signature]

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Organochlorine Pesticides and PCBs

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
Prep Method: EPA 3520

Field ID: SCIMW-33
Lab ID: 135907-001
Matrix: Water
Batch#: 43863
Units: ug/L
Diln Fac: 1

Sampled: 10/06/98
Received: 10/06/98
Extracted: 10/07/98
Analyzed: 10/17/98

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.09
4,4'-DDE	0.2	0.09
Endrin	ND	0.09
Endosulfan II	ND	0.09
Endosulfan sulfate	ND	0.09
4,4'-DDD	2.0	0.09
Endrin aldehyde	ND	0.09
4,4'-DDT	ND	0.09
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	0.9
Aroclor-1016	ND	0.5
Aroclor-1221	ND	0.9
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Recovery	Recovery Limits
TCMX	69	31-121
Decachlorobiphenyl	29*	30-145

* Values outside of QC limits

Lab #: 135907

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8080
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43863
 Units: ug/L
 Diln Fac: 1

Prep Date: 10/07/98
 Analysis Date: 11/11/98

MB Lab ID: QC81771

Analyte	Result	Reporting Limit
alpha-BHC	ND	0.05
beta-BHC	ND	0.05
gamma-BHC	ND	0.05
delta-BHC	ND	0.05
Heptachlor	ND	0.05
Aldrin	ND	0.05
Heptachlor epoxide B	ND	0.05
Heptachlor epoxide A	ND	0.05
Endosulfan I	ND	0.05
Dieldrin	ND	0.1
4,4'-DDE	ND	0.1
Endrin	ND	0.1
Endosulfan II	ND	0.1
Endosulfan sulfate	ND	0.1
4,4'-DDD	ND	0.1
Endrin aldehyde	ND	0.1
4,4'-DDT	ND	0.1
Chlordane	ND	0.5
Methoxychlor	ND	0.5
Toxaphene	ND	1.0
Aroclor-1016	ND	0.5
Aroclor-1221	ND	1.0
Aroclor-1232	ND	0.5
Aroclor-1242	ND	0.5
Aroclor-1248	ND	0.5
Aroclor-1254	ND	0.5
Aroclor-1260	ND	0.5
Surrogate	%Rec	Recovery Limits
TCMX	79	31-121
Decachlorobiphenyl	81	30-145



EPA 8080 Pesticides & PCBs

Client: Subsurface Consultants	Analysis Method: EPA 8080
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 10/07/98
Batch#: 43863	Analysis Date: 11/11/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC81772

Analyte	Spike Added	BS	%Rec #	Limits
gamma-BHC	0.5	0.5	100	62-131
Heptachlor	0.5	0.4	80	57-118
Aldrin	0.5	0.39	78	57-118
Dieldrin	0.5	0.46	92	62-123
Endrin	0.5	0.47	94	48-138
4,4'-DDT	0.5	0.47	94	56-121
Surrogate		%Rec	Limits	
TCMX		91	31-121	
Decachlorobiphenyl		74	30-145	

BSD Lab ID: QC81773

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
gamma-BHC	0.5	0.49	98	62-131	2	28
Heptachlor	0.5	0.38	76	57-118	5	26
Aldrin	0.5	0.36	72	57-118	8	27
Dieldrin	0.5	0.45	90	62-123	2	24
Endrin	0.5	0.45	90	48-138	4	27
4,4'-DDT	0.5	0.44	88	56-121	7	26
Surrogate		%Rec	Limits			
TCMX		85	31-121			
Decachlorobiphenyl		71	30-145			

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 0 out of 12 outside limits



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-33
Lab ID: 135907-001
Matrix: Filtrate
Batch#: 43864
Units: ug/L
Diln Fac: 1

Sampled: 10/06/98
Received: 10/06/98
Extracted: 10/07/98
Analyzed: 10/09/98

Analyte	Result	Reporting Limit
Naphthalene	ND	9.6
Acenaphthylene	ND	9.6
Acenaphthene	ND	9.6
Fluorene	ND	9.6
Phenanthrene	ND	9.6
Anthracene	ND	9.6
Fluoranthene	ND	9.6
Pyrene	ND	9.6
Benzo (a) anthracene	ND	9.6
Chrysene	ND	9.6
Benzo (b, k) fluoranthene	ND	9.6
Benzo (a) pyrene	ND	9.6
Indeno (1, 2, 3-cd) pyrene	ND	9.6
Dibenz (a, h) anthracene	ND	9.6
Benzo (g, h, i) perylene	ND	9.6

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	76	36-115
2-Fluorobiphenyl	75	36-113
Terphenyl-d14	39	17-115

Lab #: 135907

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 43864
Units: ug/L
Diln Fac: 1

Prep Date: 10/07/98
Analysis Date: 10/09/98

MB Lab ID: QC81774

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b, k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1, 2, 3-cd) pyrene	ND	10
Dibenz (a, h) anthracene	ND	10
Benzo (g, h, i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	87	36-115
2-Fluorobiphenyl	84	36-113
Terphenyl-d14	81	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
 Batch#: 43864
 Units: ug/L
 Diln Fac: 1

Prep Date: 10/07/98
 Analysis Date: 10/09/98

BS Lab ID: QC81775

Analyte	Spike Added	BS	%Rec	#	Limits
Acenaphthene	50	31.52	63		50-110
Pyrene	50	30.64	61		43-110
Surrogate	%Rec	Limits			
Nitrobenzene-d5	76	36-115			
2-Fluorobiphenyl	74	36-113			
Terphenyl-d14	75	17-115			

BSD Lab ID: QC81776

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD #	Limit
Acenaphthene	50	34.01	68		50-110	8	18
Pyrene	50	32.85	66		43-110	7	19
Surrogate	%Rec	Limits					
Nitrobenzene-d5	80	36-115					
2-Fluorobiphenyl	79	36-113					
Terphenyl-d14	81	17-115					

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits

CHAIN OF CUSTODY FORM

135907


PAGE _____ OF _____
ANALYSIS REQUESTED

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133.009 LAB: Curtis & Tompkins
 PROJECT CONTACT: Meg Mendoza TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES			
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	HSC	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME				
1	SCIMW-33					2							X					10	06	09	10:30	XX

Notes: SVOCs 8270 (Filtered)
Pesticides 8200

CHAIN OF CUSTODY RECORD				COMMENTS & NOTES:
RELEASED BY: (Signature) <i>Dennis Alexander</i>	DATE / TIME 10/6/98 1100	RELEASED BY: (Signature) <i>[Signature]</i>	DATE / TIME 10/6/1100	
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME	
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME	



Subsurface Consultants, Inc.
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 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 01-DEC-98
Lab Job Number: 135667
Project ID: 133.009
Location: KOT/9th Ave.Terminal

Reviewed by:

Reviewed by:

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Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 135667
CLIENT: SUBSURFACE CONSULTANTS
PROJECT#: 133.009
LOCATION: KOT/9TH AVE. TERMINAL

DATE SAMPLED: 09/18/98
DATE RECEIVED: 09/18/98
DATE ANALYZED: 09/23/98
QC BATCH#: 43566

=====
ANALYSIS: TOTAL ORGANIC CARBON *
METHOD REFERENCE: EPA 415.2
=====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
135667-001	SCIMW-2	4.4	mg/L	1.0
135667-005	SCIMW-12	ND	mg/L	1.0
135667-007	SCIMW-14	23	mg/L	1.0
135667-009	SCIMW-24	29	mg/L	2.0
METHOD BLANK	N/A	ND	mg/L	1.0

ND = Not detected at or above the reporting limit.

* = All samples filtered prior to analysis.

QA/QC SUMMARY: LCS AND MS/MSD OF SAMPLE NO:135667-005

RPD, %	6
MS/MSD RECOVERY, %	64
LCS RECOVERY, %	101



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-2
LAB ID: 135667-001
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave. Terminal
MATRIX: Filtrate

DATE SAMPLED: 09/18/98
DATE RECEIVED: 09/18/98
DATE REPORTED: 11/05/98

California TITLTM 25 Metals

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	1	43563	EPA 6010A	09/24/98
Arsenic	ND	5.0	1	43563	EPA 6010A	09/24/98
Barium	430	10	1	43563	EPA 6010A	09/24/98
Beryllium	ND	2.0	1	43563	EPA 6010A	09/24/98
Cadmium	ND	5.0	1	43563	EPA 6010A	09/24/98
Chromium (total)	ND	10	1	43563	EPA 6010A	09/24/98
Cobalt	ND	20	1	43563	EPA 6010A	09/24/98
Copper	ND	10	1	43563	EPA 6010A	09/24/98
Lead	ND	3.0	1	43563	EPA 6010A	09/24/98
Molybdenum	ND	20	1	43563	EPA 6010A	09/24/98
Nickel	ND	20	1	43563	EPA 6010A	09/24/98
Selenium	10	5.0	1	43563	EPA 6010A	09/24/98
Silver	ND	5.0	1	43563	EPA 6010A	09/24/98
Thallium	ND	5.0	1	43563	EPA 6010A	09/24/98
Vanadium	ND	10	1	43563	EPA 6010A	09/24/98
Zinc	ND	20	1	43563	EPA 6010A	09/24/98

ND = Not detected at or above reporting limit



Curtis & Tompkins, Ltd.

SAMPLE ID: SCIMW-24
LAB ID: 135667-009
CLIENT: Subsurface Consultants
PROJECT ID: 133.009
LOCATION: KOT/9th Ave. Terminal
MATRIX: Filtrate

DATE SAMPLED: 09/18/98
DATE RECEIVED: 09/18/98
DATE REPORTED: 11/05/98

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Lead	ND	3.0	1	43563	EPA 6010A	09/24/98

ND = Not detected at or above reporting limit



CLIENT: Subsurface Consultants
JOB NUMBER: 135667

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Antimony	ND	60	ug/L	1	43563	EPA 6010A	09/24/98
Arsenic	ND	5	ug/L	1	43563	EPA 6010A	09/24/98
Barium	ND	10	ug/L	1	43563	EPA 6010A	09/24/98
Beryllium	ND	2	ug/L	1	43563	EPA 6010A	09/24/98
Cadmium	ND	5	ug/L	1	43563	EPA 6010A	09/24/98
Chromium (total)	ND	10	ug/L	1	43563	EPA 6010A	09/24/98
Cobalt	ND	20	ug/L	1	43563	EPA 6010A	09/24/98
Copper	ND	10	ug/L	1	43563	EPA 6010A	09/24/98
Lead	ND	3	ug/L	1	43563	EPA 6010A	09/24/98
Molybdenum	ND	20	ug/L	1	43563	EPA 6010A	09/24/98
Nickel	ND	20	ug/L	1	43563	EPA 6010A	09/24/98
Selenium	ND	5	ug/L	1	43563	EPA 6010A	09/24/98
Silver	ND	5	ug/L	1	43563	EPA 6010A	09/24/98
Thallium	ND	5	ug/L	1	43563	EPA 6010A	09/24/98
Vanadium	ND	10	ug/L	1	43563	EPA 6010A	09/24/98
Zinc	ND	20	ug/L	1	43563	EPA 6010A	09/24/98

ND = Not Detected at or above reporting limit



Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
 JOB NUMBER: 135667

DATE REPORTED: 11/05/98

BATCH QC REPORT
 BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Antimony	500	400	493	ug/L	80	99	80-120	21	35	43563	EPA 6010A	09/24/98
Arsenic	2000	2150	2130	ug/L	108	107	80-120	1	35	43563	EPA 6010A	09/24/98
Barium	2000	2250	2240	ug/L	113	112	80-120	0	35	43563	EPA 6010A	09/24/98
Beryllium	50	55.8	55.4	ug/L	112	111	80-120	1	35	43563	EPA 6010A	09/24/98
Cadmium	50	53.5	54.5	ug/L	107	109	80-120	2	35	43563	EPA 6010A	09/24/98
Chromium (total)	200	221	219	ug/L	111	110	80-120	1	35	43563	EPA 6010A	09/24/98
Cobalt	500	556	551	ug/L	111	110	80-120	1	35	43563	EPA 6010A	09/24/98
Copper	250	284	282	ug/L	114	113	80-120	1	35	43563	EPA 6010A	09/24/98
Lead	500	534	535	ug/L	107	107	80-120	0	35	43563	EPA 6010A	09/24/98
Molybdenum	400	442	439	ug/L	111	110	80-120	1	35	43563	EPA 6010A	09/24/98
Nickel	500	553	553	ug/L	111	111	80-120	0	35	43563	EPA 6010A	09/24/98
Selenium	2000	2150	2160	ug/L	108	108	80-120	1	35	43563	EPA 6010A	09/24/98
Silver	100	114	114	ug/L	114	114	80-120	0	35	43563	EPA 6010A	09/24/98
Thallium	2000	2180	2200	ug/L	109	110	80-120	1	35	43563	EPA 6010A	09/24/98
Vanadium	500	555	554	ug/L	111	111	80-120	0	35	43563	EPA 6010A	09/24/98
Zinc	500	553	552	ug/L	111	110	80-120	0	35	43563	EPA 6010A	09/24/98



CLIENT: Subsurface Consultants
JOB NUMBER: 135667

BATCH QC REPORT
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Antimony	500	135667-001	<60.000	431	ug/L	86	65-135	43563	EPA 6010A	09/24/98
Arsenic	2000	135667-001	<5.000	1790	ug/L	90	65-135	43563	EPA 6010A	09/24/98
Barium	2000	135667-001	428	2320	ug/L	95	65-135	43563	EPA 6010A	09/24/98
Beryllium	50	135667-001	<2.000	42.1	ug/L	84	65-135	43563	EPA 6010A	09/24/98
Cadmium	50	135667-001	<5.000	38.7	ug/L	77	65-135	43563	EPA 6010A	09/24/98
Chromium (total)	200	135667-001	<10.000	170	ug/L	85	65-135	43563	EPA 6010A	09/24/98
Cobalt	500	135667-001	<20.000	416	ug/L	83	65-135	43563	EPA 6010A	09/24/98
Copper	250	135667-001	<10.000	291	ug/L	116	65-135	43563	EPA 6010A	09/24/98
Lead	500	135667-001	<3.000	405	ug/L	81	65-135	43563	EPA 6010A	09/24/98
Molybdenum	400	135667-001	<20.000	360	ug/L	90	65-135	43563	EPA 6010A	09/24/98
Nickel	500	135667-001	<20.000	440	ug/L	88	65-135	43563	EPA 6010A	09/24/98
Selenium	2000	135667-001	10	1980	ug/L	99	65-135	43563	EPA 6010A	09/24/98
Silver	100	135667-001	<5.000	111	ug/L	111	65-135	43563	EPA 6010A	09/24/98
Thallium	2000	135667-001	<5.000	1670	ug/L	84	65-135	43563	EPA 6010A	09/24/98
Vanadium	500	135667-001	<10.000	454	ug/L	91	65-135	43563	EPA 6010A	09/24/98
Zinc	500	135667-001	<20.000	498	ug/L	100	65-135	43563	EPA 6010A	09/24/98



Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 135667
CLIENT: SUBSURFACE CONSULTANTS
LOCATION: KOT/9TH AVE. TERMINAL
PROJECT ID: 133.009

DATE SAMPLED: 09/18/98
DATE RECEIVED: 09/18/98
DATE ANALYZED: 11/11/98
QC BATCH#: 44569

=====
ANALYSIS: MERCURY (FILTRATE)
METHOD REFERENCE: EPA 7470A
=====

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
135667-001	SCIMW-2	ND	ug/L	0.20
METHOD BLANK	N/A	ND	ug/L	0.20

ND = Not detected at or above the reporting limit.

QA/QC SUMMARY:BS/BSD

RPD, %	7
RECOVERY, %	94



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-2
Lab ID: 135667-001
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
Naphthalene	ND	9.7
Acenaphthylene	ND	9.7
Acenaphthene	ND	9.7
Fluorene	ND	9.7
Phenanthrene	ND	9.7
Anthracene	ND	9.7
Fluoranthene	ND	9.7
Pyrene	ND	9.7
Benzo(a)anthracene	ND	9.7
Chrysene	ND	9.7
Benzo(b,k)fluoranthene	ND	9.7
Benzo(a)pyrene	ND	9.7
Indeno(1,2,3-cd)pyrene	ND	9.7
Dibenz(a,h)anthracene	ND	9.7
Benzo(g,h,i)perylene	ND	9.7

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	74	36-115
2-Fluorobiphenyl	83	36-113
Terphenyl-d14	61	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-2
Lab ID: 135667-001
Matrix: Water
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/03/98

Analyte	Result	Reporting Limit
Naphthalene	ND	9.7
Acenaphthylene	ND	9.7
Acenaphthene	ND	9.7
Fluorene	ND	9.7
Phenanthrene	ND	9.7
Anthracene	ND	9.7
Fluoranthene	ND	9.7
Pyrene	ND	9.7
Benzo(a)anthracene	ND	9.7
Chrysene	ND	9.7
Benzo(b,k)fluoranthene	ND	9.7
Benzo(a)pyrene	ND	9.7
Indeno(1,2,3-cd)pyrene	ND	9.7
Dibenz(a,h)anthracene	ND	9.7
Benzo(g,h,i)perylene	ND	9.7

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	86	36-115
2-Fluorobiphenyl	64	36-113
Terphenyl-d14	31	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-3
Lab ID: 135667-002
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
Naphthalene	ND	11
Acenaphthylene	ND	11
Acenaphthene	ND	11
Fluorene	ND	11
Phenanthrene	ND	11
Anthracene	ND	11
Fluoranthene	ND	11
Pyrene	ND	11
Benzo (a) anthracene	ND	11
Chrysene	ND	11
Benzo (b, k) fluoranthene	ND	11
Benzo (a) pyrene	ND	11
Indeno (1, 2, 3-cd) pyrene	ND	11
Dibenz (a, h) anthracene	ND	11
Benzo (g, h, i) perylene	ND	11

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	80	36-115
2-Fluorobiphenyl	89	36-113
Terphenyl-d14	57	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-8
Lab ID: 135667-003
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
Naphthalene	ND	11
Acenaphthylene	ND	11
Acenaphthene	ND	11
Fluorene	ND	11
Phenanthrene	ND	11
Anthracene	ND	11
Fluoranthene	ND	11
Pyrene	ND	11
Benzo (a) anthracene	ND	11
Chrysene	ND	11
Benzo (b, k) fluoranthene	ND	11
Benzo (a) pyrene	ND	11
Indeno (1, 2, 3-cd) pyrene	ND	11
Dibenz (a, h) anthracene	ND	11
Benzo (g, h, i) perylene	ND	11

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	64	36-115
2-Fluorobiphenyl	75	36-113
Terphenyl-d14	54	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-13
Lab ID: 135667-006
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
Naphthalene	ND	11
Acenaphthylene	ND	11
Acenaphthene	ND	11
Fluorene	ND	11
Phenanthrene	ND	11
Anthracene	ND	11
Fluoranthene	ND	11
Pyrene	ND	11
Benzo (a) anthracene	ND	11
Chrysene	ND	11
Benzo (b, k) fluoranthene	ND	11
Benzo (a) pyrene	ND	11
Indeno (1, 2, 3-cd) pyrene	ND	11
Dibenz (a, h) anthracene	ND	11
Benzo (g, h, i) perylene	ND	11

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	81	36-115
2-Fluorobiphenyl	92	36-113
Terphenyl-d14	62	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-14
Lab ID: 135667-007
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
---------	--------	-----------------

Naphthalene	ND	9.8
Acenaphthylene	ND	9.8
Acenaphthene	ND	9.8
Fluorene	ND	9.8
Phenanthrene	ND	9.8
Anthracene	ND	9.8
Fluoranthene	ND	9.8
Pyrene	ND	9.8
Benzo (a) anthracene	ND	9.8
Chrysene	ND	9.8
Benzo (b, k) fluoranthene	ND	9.8
Benzo (a) pyrene	ND	9.8
Indeno (1, 2, 3- cd) pyrene	ND	9.8
Dibenz (a, h) anthracene	ND	9.8
Benzo (g, h, i) perylene	ND	9.8

Surrogate	%Recovery	Recovery Limits
-----------	-----------	-----------------

Nitrobenzene-d5	74	36-115
2-Fluorobiphenyl	82	36-113
Terphenyl-d14	54	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-14
Lab ID: 135667-007
Matrix: Water
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
Naphthalene	ND	9.8
Acenaphthylene	ND	9.8
Acenaphthene	ND	9.8
Fluorene	ND	9.8
Phenanthrene	ND	9.8
Anthracene	ND	9.8
Fluoranthene	ND	9.8
Pyrene	ND	9.8
Benzo (a) anthracene	ND	9.8
Chrysene	ND	9.8
Benzo (b, k) fluoranthene	ND	9.8
Benzo (a) pyrene	ND	9.8
Indeno (1, 2, 3-cd) pyrene	ND	9.8
Dibenz (a, h) anthracene	ND	9.8
Benzo (g, h, i) perylene	ND	9.8

Surrogate	%Recovery	Recovery Limits
Nitrobenzene-d5	72	36-115
2-Fluorobiphenyl	81	36-113
Terphenyl-d14	62	17-115



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

Field ID: SCIMW-24
Lab ID: 135667-009
Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Sampled: 09/18/98
Received: 09/18/98
Extracted: 09/23/98
Analyzed: 10/02/98

Analyte	Result	Reporting Limit
---------	--------	-----------------

Naphthalene	44	9.7
Acenaphthylene	ND	9.7
Acenaphthene	ND	9.7
Fluorene	ND	9.7
Phenanthrene	ND	9.7
Anthracene	ND	9.7
Fluoranthene	ND	9.7
Pyrene	ND	9.7
Benzo (a) anthracene	ND	9.7
Chrysene	ND	9.7
Benzo (b, k) fluoranthene	ND	9.7
Benzo (a) pyrene	ND	9.7
Indeno (1, 2, 3- cd) pyrene	ND	9.7
Dibenz (a, h) anthracene	ND	9.7
Benzo (g, h, i) perylene	ND	9.7

Surrogate	%Recovery	Recovery Limits
-----------	-----------	-----------------

Nitrobenzene-d5	67	36-115
2-Fluorobiphenyl	82	36-113
Terphenyl-d14	44	17-115

Lab #: 135667

BATCH QC REPORT



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants	Analysis Method: EPA 8270B
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/23/98
Batch#: 43579	Analysis Date: 10/01/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC80709

Analyte	Spike Added	BS	%Rec #	Limits
Acenaphthene	50	28.92	58	50-110
Pyrene	50	30.47	61	43-110
Surrogate	%Rec	Limits		
Nitrobenzene-d5	75	36-115		
2-Fluorobiphenyl	72	36-113		
Terphenyl-d14	80	17-115		

BSD Lab ID: QC80710

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Acenaphthene	50	31.81	64	50-110	9	18
Pyrene	50	33.67	67	43-110	10	19
Surrogate	%Rec	Limits				
Nitrobenzene-d5	80	36-115				
2-Fluorobiphenyl	80	36-113				
Terphenyl-d14	89	17-115				

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits
 RPD: 0 out of 2 outside limits
 Spike Recovery: 0 out of 4 outside limits

Lab #: 135667

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
Prep Method: EPA 3520

LABORATORY CONTROL SAMPLE

Matrix: Filtrate
Batch#: 43579
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/98
Analysis Date: 10/01/98

LCS Lab ID: QC80711

Analyte	Result	Spike Added	%Rec #	Limits
Acenaphthene	19.08	-1	DO *	50-110
Pyrene	5.037	-1	DO *	43-110
Surrogate	%Rec	Limits		
Nitrobenzene-d5	DO*	36-115		
2-Fluorobiphenyl	DO*	36-113		
Terphenyl-d14	DO*	17-115		

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 2 out of 2 outside limits

DO: Surrogate diluted out



Polynuclear Aromatic Hydrocarbons by GC/MS

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8270B
 Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
 Batch#: 43579
 Units: ug/L
 Diln Fac: 1

Prep Date: 09/23/98
 Analysis Date: 10/01/98

MB Lab ID: QC80708

Analyte	Result	Reporting Limit
Naphthalene	ND	10
Acenaphthylene	ND	10
Acenaphthene	ND	10
Fluorene	ND	10
Phenanthrene	ND	10
Anthracene	ND	10
Fluoranthene	ND	10
Pyrene	ND	10
Benzo (a) anthracene	ND	10
Chrysene	ND	10
Benzo (b,k) fluoranthene	ND	10
Benzo (a) pyrene	ND	10
Indeno (1,2,3-cd) pyrene	ND	10
Dibenz (a,h) anthracene	ND	10
Benzo (g,h,i) perylene	ND	10
Surrogate	%Rec	Recovery Limits
Nitrobenzene-d5	81	36-115
2-Fluorobiphenyl	81	36-113
Terphenyl-d14	99	17-115



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135667-009	SCIMW-24	43581	09/18/98	09/25/98	09/25/98	

Matrix: Water

Analyte	Units	135667-009
Diln Fac:		1
Gasoline C7-C12	ug/L	7100
Surrogate		
Trifluorotoluene	%REC	203 *
Bromofluorobenzene	%REC	193 *

* Values outside of QC limits

GC05 'G' File TVH

Sample Name : S,135667-009,43581,

Sample #:

Page 1 of 1

FileName : G:\GC05\DATA\267G020.raw

Date : 9/25/98 12:53 AM

Method : TVHBTXE

Time of Injection: 9/25/98 12:26 AM

Start Time : 0.00 min End Time : 26.80 min

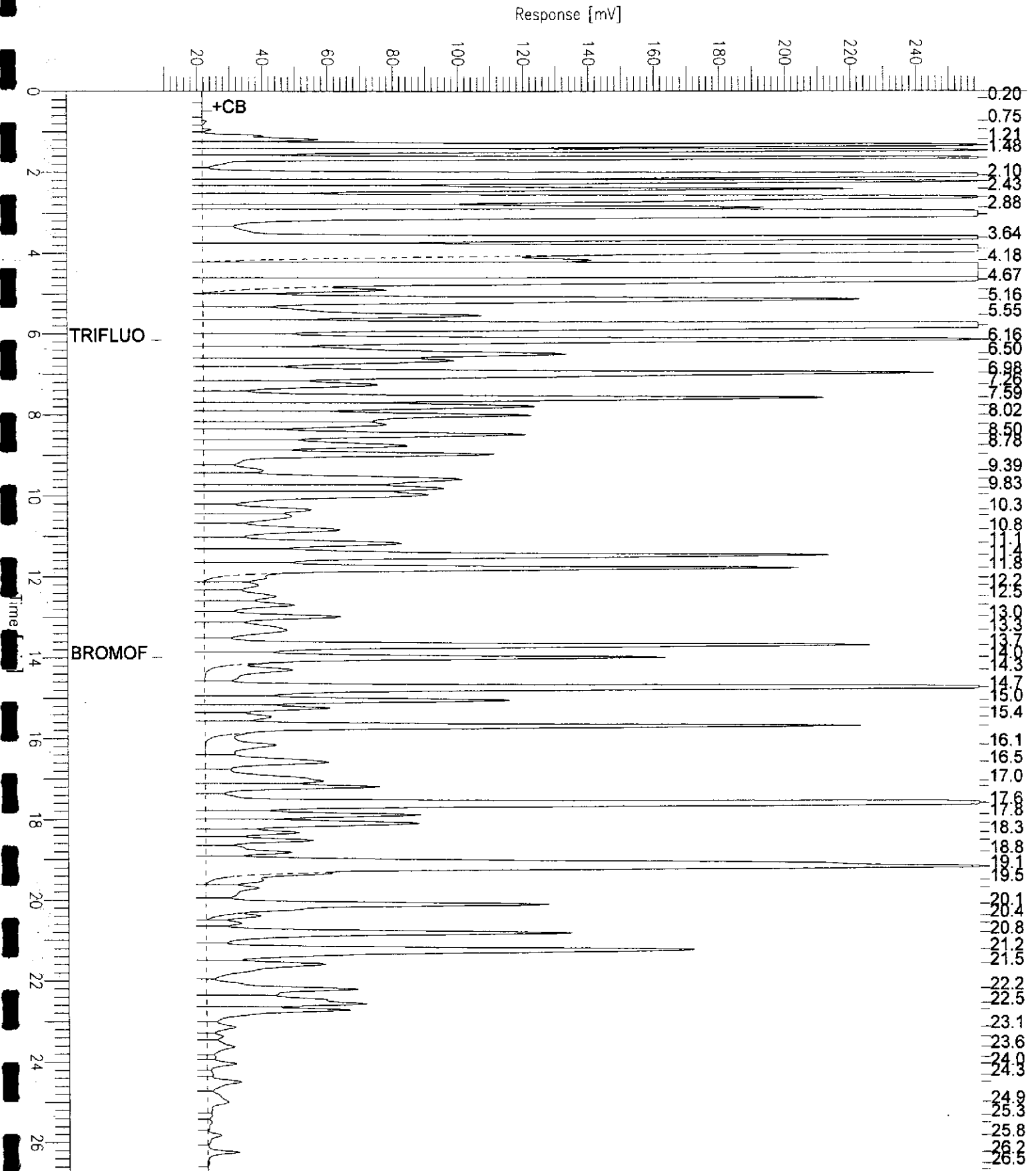
Low Point : 9.08 mV

High Point : 259.08 mV

Scale Factor: -1.0

Plot Offset: 9 mV

Plot Scale: 250.0 mV

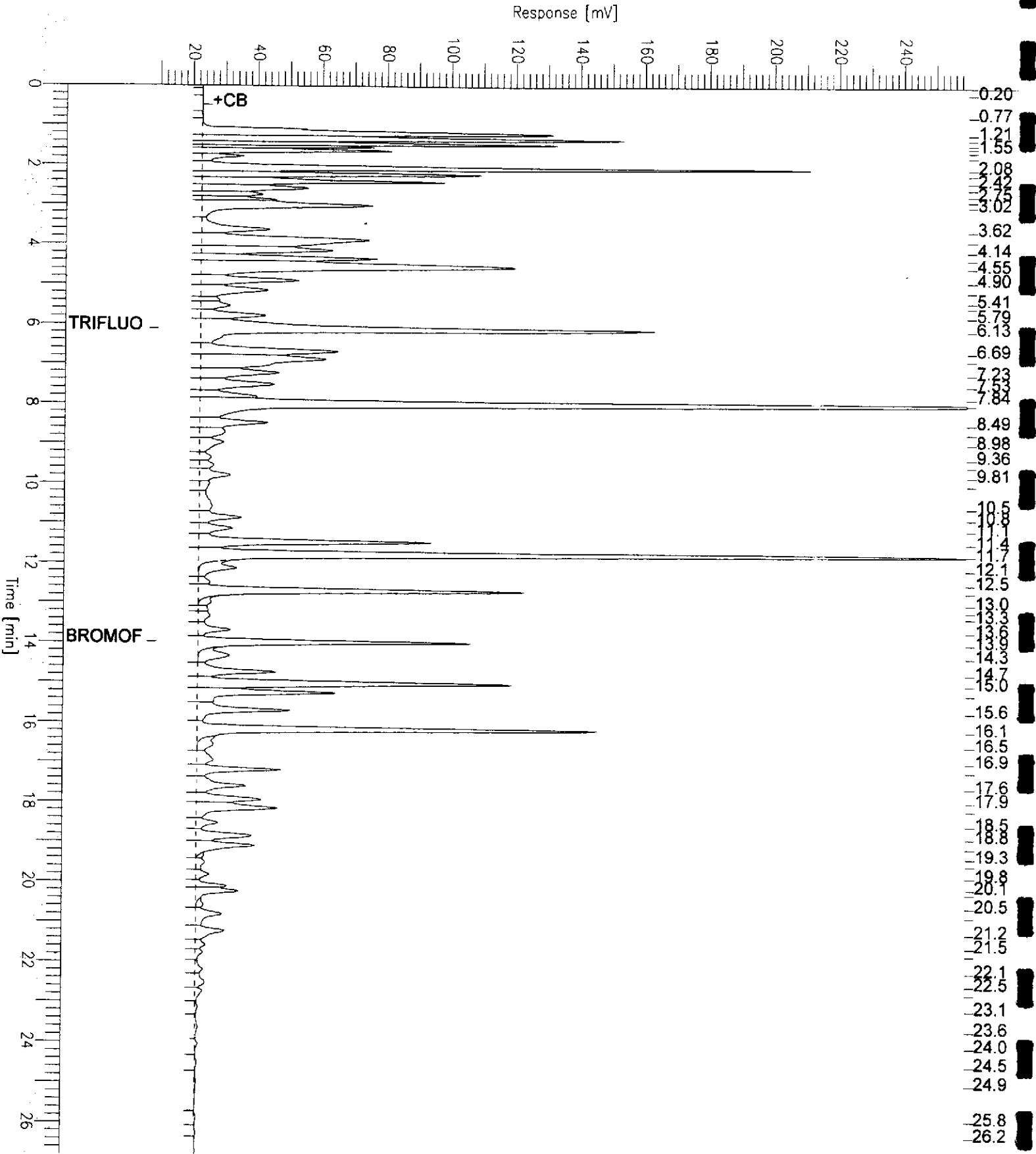


GC05 'G' File TVH

Sample Name : CCV/LCS, QC80716, 98WS6477, 43581,
 FileName : G:\GC05\DATA\267G001.raw
 Method : TVHBTXE
 Start Time : 0.00 min
 Scale Factor : -1.0

End Time : 26.80 min
 Plot Offset: 10 mV

Sample #: GAS
 Date : 9/24/98 02:12 PM
 Time of Injection: 9/24/98 10:47 AM
 Low Point : 9.73 mV
 High Point : 259.73 mV
 Plot Scale: 250.0 mV





BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135667-009	SCIMW-24	43616	09/18/98	09/26/98	09/26/98	

Matrix: Water

Analyte	Units	135667-009
Diln Fac:		5
Benzene	ug/L	950
Toluene	ug/L	53
Ethylbenzene	ug/L	99
m,p-Xylenes	ug/L	84
o-Xylene	ug/L	14
Surrogate		
Trifluorotoluene	%REC	122
Bromofluorobenzene	%REC	137

Lab #: 135667

BATCH QC REPORT



Curtis Laboratories Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43581
Units: ug/L
Diln Fac: 1

Prep Date: 09/24/98
Analysis Date: 09/24/98

MB Lab ID: QC80717

Analyte	Result	
Gasoline C7-C12	<50	
Surrogate	%Rec	Recovery Limits
Trifluorotoluene	96	59-162
Bromofluorobenzene	93	59-162

Lab #: 135667

BATCH QC REPORT



Curtis & Associates, Ltd.

BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

MB Lab ID: QC80860

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	104	53-124
Bromofluorobenzene	105	41-142

Lab #: 135667

BATCH QC REPORT



Curtis Babcock Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave.Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 43581
Units: ug/L
Diln Fac: 1

Prep Date: 09/24/98
Analysis Date: 09/24/98

LCS Lab ID: QC80716

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1826	2000	91	80-119
Surrogate	%Rec	Limits		
Trifluorotoluene	121	59-162		
Bromofluorobenzene	99	59-162		

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

Lab #: 135667

BATCH QC REPORT



Curtis & Atkins, Ltd.

BTXE

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 43616
Units: ug/L
Diln Fac: 1

Prep Date: 09/25/98
Analysis Date: 09/25/98

LCS Lab ID: QC80859

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	15.48	20	77	69-109
Toluene	18.76	20	94	72-116
Ethylbenzene	20.37	20	102	67-120
m,p-Xylenes	41.43	40	104	69-117
o-Xylene	20.8	20	104	75-122
Surrogate	%Rec	Limits		
Trifluorotoluene	110	53-124		
Bromofluorobenzene	118	41-142		

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

Lab #: 135667

BATCH QC REPORT



Curtis Bakken, Ltd.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 135615-001
Matrix: Water
Batch#: 43581
Units: ug/L
Diln Fac: 1

Sample Date: 09/15/98
Received Date: 09/16/98
Prep Date: 09/24/98
Analysis Date: 09/24/98

MS Lab ID: QC80720

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	2149	107	71-131
Surrogate	%Rec	Limits			
Trifluorotoluene	150	59-162			
Bromofluorobenzene	136	59-162			

MSD Lab ID: QC80721

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2135	107	71-131	1	26
Surrogate	%Rec	Limits				
Trifluorotoluene	151	59-162				
Bromofluorobenzene	137	59-162				

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

Lab #: 135667

BATCH QC REPORT



Curtis Environmental, Ltd.

BTXE

Client: Subsurface Consultants
 Project#: 133.009
 Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8020A
 Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
 Lab ID: 135731-001
 Matrix: Water
 Batch#: 43616
 Units: ug/L
 Diln Fac: 1

Sample Date: 09/21/98
 Received Date: 09/24/98
 Prep Date: 09/25/98
 Analysis Date: 09/25/98

MS Lab ID: QC80861

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5	14.23	69	55-125
Toluene	20	<0.5	17.63	85	65-126
Ethylbenzene	20	<0.5	318.6	-83 *	60-129
m,p-Xylenes	40	<0.5	620.9	-42 *	68-116
o-Xylene	20	<0.5	93.38	65 *	69-129
Surrogate	%Rec	Limits			
Trifluorotoluene	104	53-124			
Bromofluorobenzene	133	41-142			

MSD Lab ID: QC80862

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	14.39	69	55-125	1	11
Toluene	20	18.2	88	65-126	3	11
Ethylbenzene	20	328.7	-33 *	60-129	3	12
m,p-Xylenes	40	622.6	-38 *	68-116	0	11
o-Xylene	20	92.98	63 *	69-129	0	12
Surrogate	%Rec	Limits				
Trifluorotoluene	105	53-124				
Bromofluorobenzene	135	41-142				

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 6 out of 10 outside limits



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520
Cleanup Method: 3630 some

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135667-001	SCIMW-2	43578	09/18/98	09/23/98	10/22/98	
135667-002	SCIMW-3	43578	09/18/98	09/23/98	10/22/98	
135667-003	SCIMW-8	43578	09/18/98	09/23/98	10/22/98	
135667-004	SCIMW-10	43578	09/18/98	09/23/98	10/22/98	

Matrix: Water

Analyte	Units	135667-001	135667-002	135667-003	135667-004
Diln Fac:		2	1	1	1
Diesel C12-C22	ug/L	31000 H	75 YH	<50	<50
Motor Oil C22-C50	ug/L	5400 YL	<300	<300	<300
Surrogate					
Hexacosane	%REC	72	95	79	84

- Y: Sample exhibits fuel pattern which does not resemble standard
H: Heavier hydrocarbons than indicated standard
L: Lighter hydrocarbons than indicated standard

Chromatogram

Sample Name : 134667-001,43578,SG

Sample #: 43578

Page 1 of 1

FileName : C:\GC11\CHA\294A037.RAW

Date : 10/23/98 10:18 AM

Method : ATEH293.MTH

Time of Injection: 10/22/98 06:41 PM

Start Time : 0.01 min End Time : 31.91 min

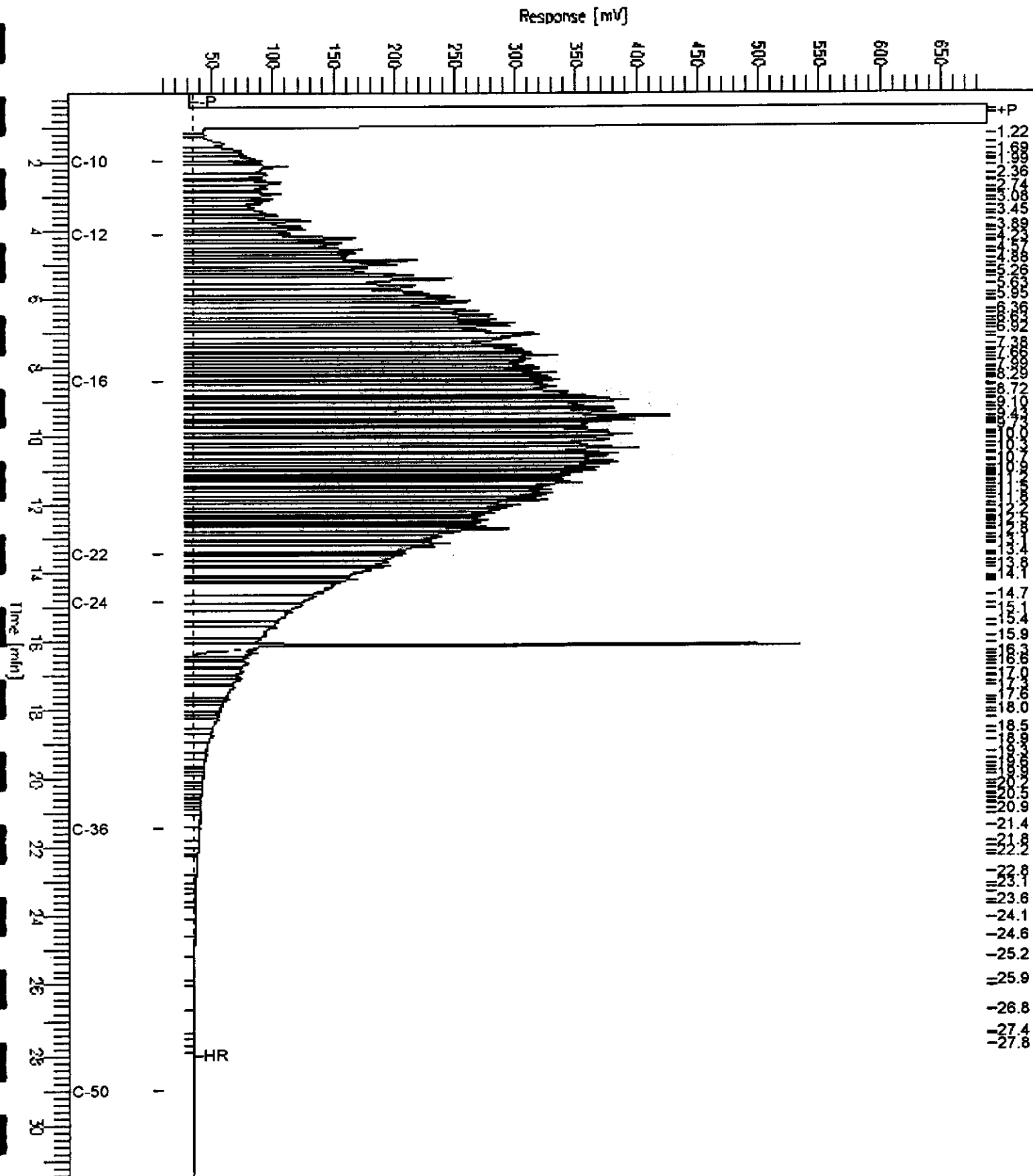
Low Point : 8.36 mV

High Point : 688.66 mV

Scale Factor: 0.0

Plot Offset: 8 mV

Plot Scale: 680.3 mV



Chromatogram

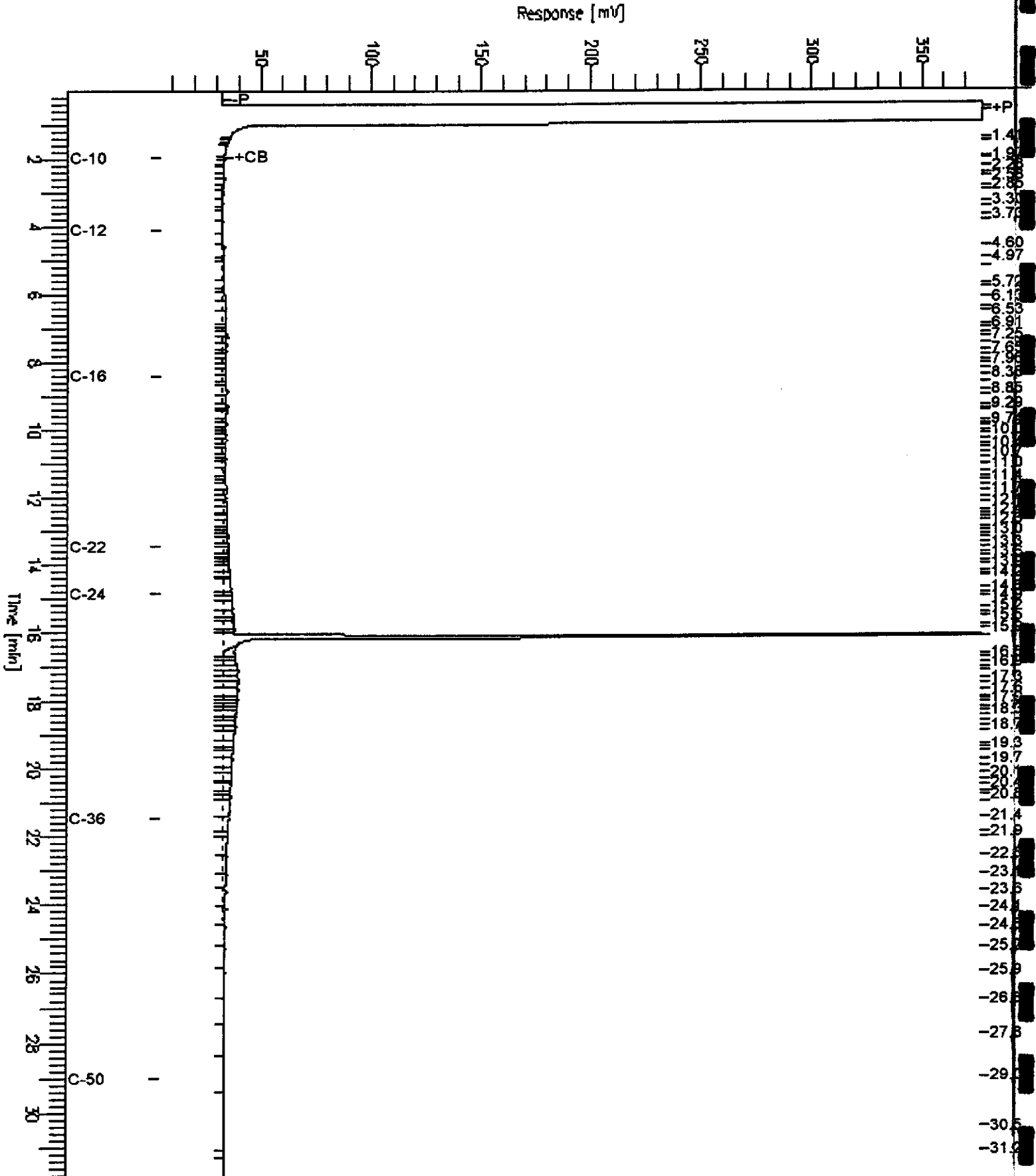
Sample Name : 135667-002,43578,SG
FileName : C:\GC11\CHA\294A014.RAW
Method : ATEH293.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 4 mV

Sample #: 43578
Date : 10/22/98 08:53 AM
Time of Injection: 10/22/98 03:12 AM
Low Point : 4.24 mV
Plot Scale: 373.4 mV

Page 1 of 1

High Point : 377.63 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520
Cleanup Method: 3630 some

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135667-005	SCIMW-12	43578	09/18/98	09/23/98	10/22/98	
135667-006	SCIMW-13	43578	09/18/98	09/23/98	10/22/98	
135667-007	SCIMW-14	43578	09/18/98	09/23/98	10/22/98	
135667-008	SCIMW-19	43578	09/18/98	09/23/98	10/22/98	

Matrix: Water

Analyte	Units	135667-005	135667-006	135667-007	135667-008
Diln Fac:		1	1	1	1
Diesel C12-C22	ug/L	<50	<50	<50	<50
Motor Oil C22-C50	ug/L	<300	<300	<300	<300
Surrogate					
Hexacosane	%REC	83	66	85	69

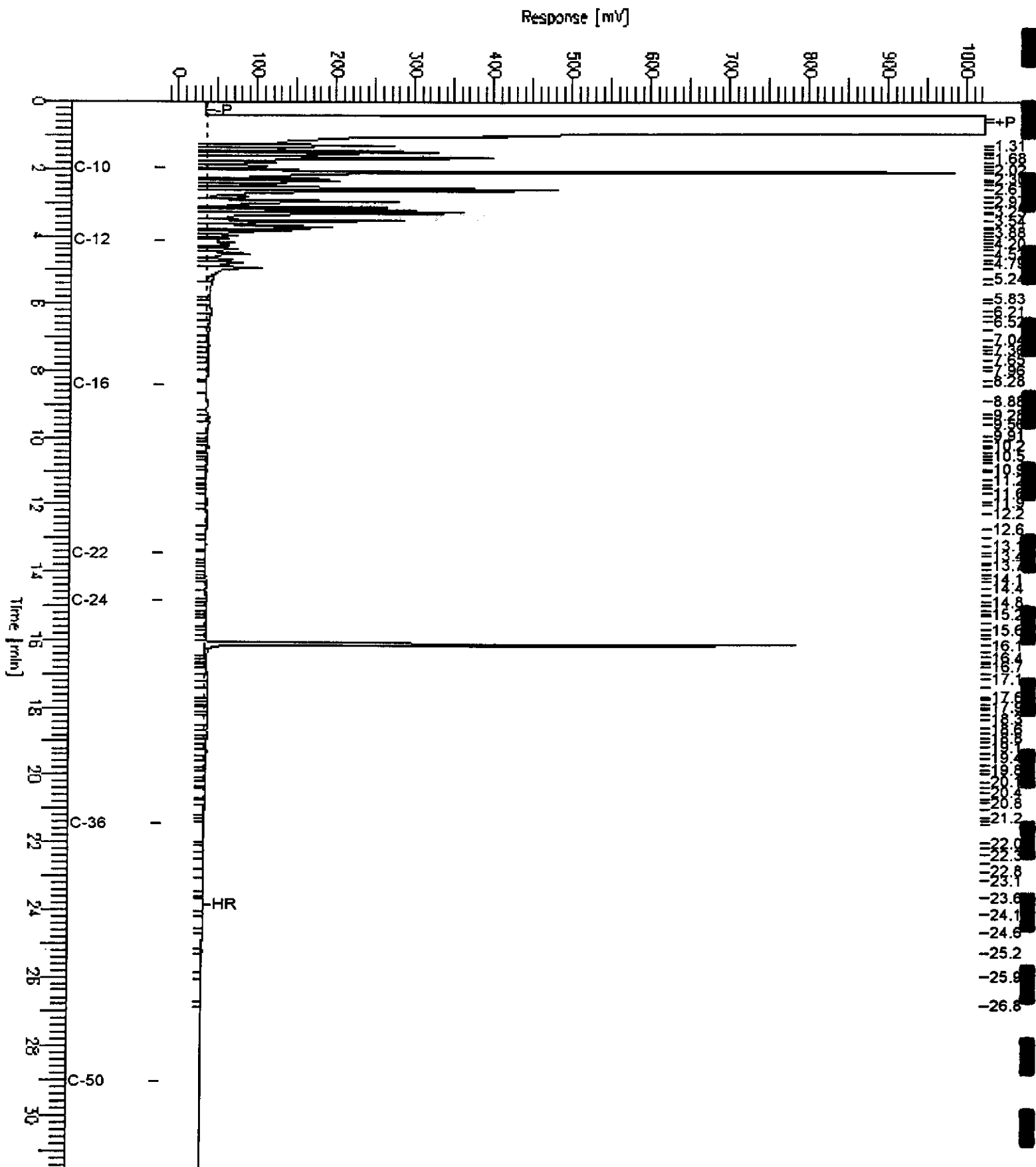
Chromatogram

Sample Name : 135667-009,43578,SG
FileName : C:\GC11\CHA\294A025.RAW
Method : ATEH293.MTH
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 31.90 min
Plot Offset: -19 mV

Sample #: 43578
Date : 10/23/98 08:37 AM
Time of Injection: 10/22/98 10:35 AM
Low Point : -18.69 mV
Plot Scale: 1042.7 mV
High Point : 1024.00 mV

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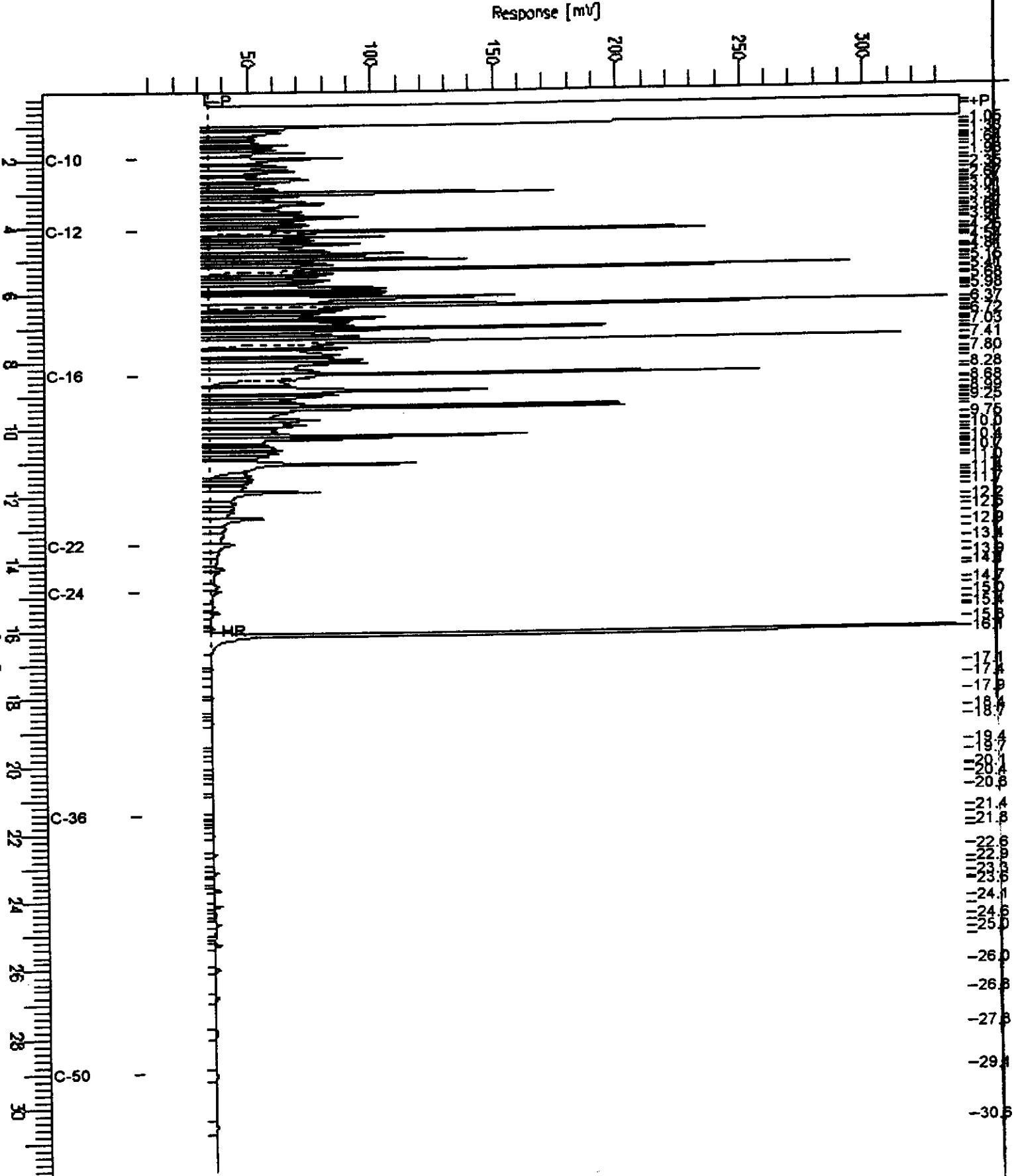


Chromatogram

Sample Name : CCV,98WS6585,DS
FileName : C:\GC11\CHA\294A001.RAW
Method : ATEH293.MTH
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.91 min
Plot Offset : 5 mV

Sample #: 500MG/L
Date : 10/22/98 08:19 AM
Time of Injection: 10/21/98 06:28 PM
Low Point : 4.65 mV
Plot Scale : 335.0 mV
High Point : 339.64 mV

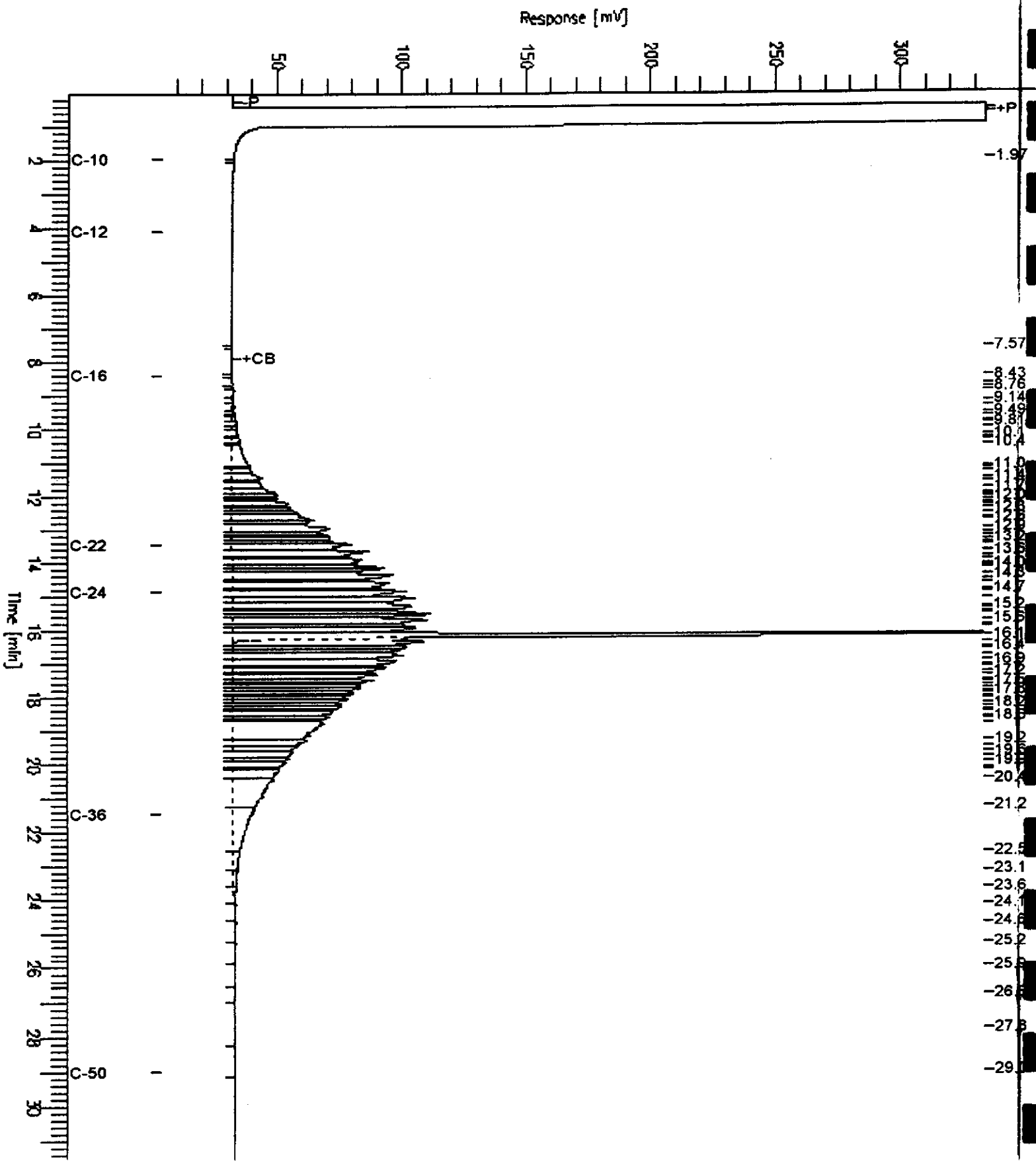


Chromatogram

Sample Name : CCV, 98WS6334, mo
FileName : C:\GC11\CHA\294A004.RAW
Method : ATEH293.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: 4 mV

Sample #: 500MG/L
Date : 10/22/98 08:25 AM
Time of Injection: 10/21/98 08:28 PM
Low Point : 3.93 mV
High Point : 334.38 mV
Plot Scale: 330.4 mV





TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave. Terminal	Cleanup Method: 3630 some

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
135667-009	SCIMW-24	43578	09/18/98	09/23/98	10/22/98	

Matrix: Water

Analyte	Units	135667-009
Diln Fac:		1
Diesel C12-C22	ug/L	330 YL
Motor Oil C22-C50	ug/L	<300
Surrogate		
Hexacosane	%REC	82

Y: Sample exhibits fuel pattern which does not resemble standard
L: Lighter hydrocarbons than indicated standard

Lab #: 135667

BATCH QC REPORT



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.009
Location: KOT/9th Ave. Terminal

Analysis Method: EPA 8015M
Prep Method: EPA 3520
Cleanup Method: EPA 3630 some

METHOD BLANK

Matrix: Water
Batch#: 43578
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/98
Analysis Date: 10/22/98

MB Lab ID: QC80705

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	82	53-136

Lab #: 135667

BATCH QC REPORT



Curtis & Tompkins Ltd.
Page 1 of 1

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants	Analysis Method: EPA 8015M
Project#: 133.009	Prep Method: EPA 3520
Location: KOT/9th Ave.Terminal	Cleanup Method: EPA 3630 some

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water	Prep Date: 09/23/98
Batch#: 43578	Analysis Date: 10/22/98
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC80706

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	1980	80	58-110
Surrogate	%Rec	Limits		
Hexacosane	85	53-136		

BSD Lab ID: QC80707

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2049	83	58-110	3	21
Surrogate	%Rec	Limits				
Hexacosane	91	53-136				

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



Total Dissolved Solids (TDS)

Client: Subsurface Consultants
 Project #: 133.009
 Location : KOT/9th Ave. Terminal

Analysis Method: EPA 160.1
 Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
135667-001	SCIMW-2	43619	18-SEP-98	25-SEP-98	-
135667-005	SCIMW-12	43619	18-SEP-98	25-SEP-98	-
135667-007	SCIMW-14	43619	18-SEP-98	25-SEP-98	-
135667-009	SCIMW-24	43619	18-SEP-98	25-SEP-98	-
QC80873	Method Blank	43619	-	25-SEP-98	-

Analyte: Total Dissolved Solids

Matrix: Water

Units: mg/L

Sample #	Client ID	Result	Reporting Limit	Dilution Factor
135667-001	SCIMW-2	12600	10	1
135667-005	SCIMW-12	24700	10	1
135667-007	SCIMW-14	3190	10	1
135667-009	SCIMW-24	1850	10	1
QC80873	Method Blank	ND	10	1

ND = None Detected at or above Reporting Limit



Total Dissolved Solids (TDS)

Client: Subsurface Consultants
Project #: 133.009
Location : KOT/9th Ave.Terminal

Analysis Method: EPA 160.1
Prep Method: EPA 160.1

Sample #	Client ID	Batch#	Sampled	Analyzed	Moisture
QC80874	SDUP of 135755-005	43619	25-SEP-98	25-SEP-98	-

Analyte: Total Dissolved Solids **Matrix:** Water **Units:** mg/L

Sample #	Sample Type	Result	%RPD	Limit
QC80874	SDUP of 135755-005	1434	2	25
135755-005	ZZZZZZZZ	1466		

OF CUSTODY FORM

135667

ANALYSIS REQUESTED						

PROJECT NAME: 9th Ave. Terminal
 JOB NUMBER: 133.009 LAB: Cristina Tompkins
 PROJECT CONTACT: Meg Mendoza / Jeri Alexander TURNAROUND: Normal
 SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H ₂ SO ₄	HNO ₃	ICE	NONE	MONTH	DAY	YEAR	TIME	
-1	SCI MW-2	X					5	2			X				09	18	98	1330	X X X X X X X
-2	SCI MW-3	X					2											1230	X X X X X X X
-3	SCI MW-8	X					2											1115	X X X X X X X
-4	SCI MW-10	X					1											1000	X X X X X X X
-5	SCI MW-12	X					2	2										1000	X X X X X X X
-6	SCI MW-13	X					2											1200	X X X X X X X
-7	SCI MW-14	X					3	2										1030	X X X X X X X
-8	SCI MW-19	X					1											1315	X X X X X X X
-9	SCI MW-24	X					4	1	2		X		X		09	18	98	0930	X X X X X X X

CHAIN OF CUSTODY RECORD			
RELEASED BY: (Signature) <u>Dennis Alexander</u>	DATE / TIME 9/18/98 1440	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature) <u>Ali ...</u>	DATE / TIME 09/15/98 1440	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RELEASED BY: (Signature)	DATE / TIME

COMMENTS & NOTES: * Please filter/fix sample before metals/lead analysis



Subsurface Consultants, Inc.
 171 - 12th Street, Suite 202, Oakland, CA 94607
 (510) 268-0461 - FAX: (510) 268-0137
 3736 Mt. Diablo Blvd., Ste. 200, Lafayette, CA 94549
 (925) 299-7960 - (925) 299-7970

CytoCulture

ENVIRONMENTAL
BIOTECHNOLOGY

CytoCulture International, Inc. 1986

Client: Subsurface Consultants
Contact: Meg Mendoza/ Jeri Alexander
3736 Mt Diablo Blvd. Suite 200
Lafayette, CA 94549

September 24, 1998 Cyto ID #: 98-75
Fax: (925)-299-7970 **Phone:** (925) 299-7960
Project Description: Port of Oakland
Project #: 133.009

SAMPLES: 4 water samples were received on 9/18/98. The samples were assayed on 9/18/98, and stored at 4°C for any follow up work.

DO, pH, and Redox Potential

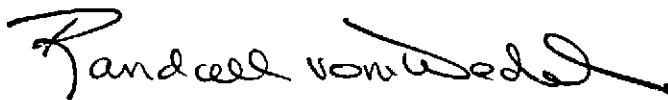
ANALYSIS REQUEST: Analyses for pH, Dissolved oxygen (DO) and Redox Potential (ORP) for water samples.

PROTOCOLS: pH was measured by Standard Methods: SM 4500-H+B
Redox Potential was measured by Standard Methods: SM 2580B
Dissolved Oxygen was measured by Standard Methods: SM 4500-OG
All measurements were performed on 9/18/98.

Client Sample	Sample Date	pH	DO (mg/L)	ORP (mV)
SCIMW-2	8/18/98	5.8	1.2	-31
SCIMW-12	8/18/98	6.0	5.0	+132
SCIMW-14	8/18/98	6.1	2.7	+140
SCIMW-24	8/18/98	6.3	1.9	-52



Sean P. Bushart, Ph.D.
Environmental Microbiologist
Laboratory Services



Randall von Wedel, Ph.D.
Principal Biochemist and
Director of Research

Subsurface Consultants

Subcontracted Microbiology Assays
performed by

CytoCulture Environmental Biotechnology

CHAIN OF CUSTODY FORM

98-75

Project Name: <i>9th Ave. Terminal</i>	Project No. <i>133.009</i>	Subsurface Purchase Order / LOG IN #:
Subsurface Client Organization: <i>Port of Oakland</i>		Subsurface Project Manager: <i>Meg Mendoza / Jeri Alexander</i>
Address to Send Results: <i>Subsurface Consultants - 3736 Mt. Diablo Blvd. Lafayette, Ca. 94549</i>		
Client Fax for Sending Data: <i>(925) 299-7970</i>		Client Contact / Project Manager: <i>Meg Mendoza</i>
Client Tel for Follow-up: <i>(925) 299-7960</i>		Client Sampler / Recorder: <i>Dennis Alexander</i>

Sample ID	Sampling		Matrix		Bacterial Plate Enumerations				Bacterial MPN Enumerations			Nutrient / Chemical Assays										
	Date	Time	Soil	Water	Aerobic Hydrocarbon Degradors	Total Heterotrophs	Anaerobic Hydrocarbon Degradors	Total Heterotrophs	Anaerobic Nitrate Reducers	Iron Reducers	Sulfate Reducers	pH	mV	DO	NH3	PO4	NO3	SO4	Sulfide	Fe(II)	Fe(III)	
SC1Mw-2	<i>9/18/98</i>	<i>1530</i>		<i>X</i>								<i>X</i>	<i>X</i>									
SC1Mw-12	<i>↓</i>	<i>1000</i>		<i>X</i>								<i>X</i>	<i>X</i>									
SC1Mw-14	<i>↓</i>	<i>1030</i>		<i>X</i>								<i>X</i>	<i>X</i>									
SC1Mw-24	<i>↓</i>	<i>0930</i>		<i>X</i>								<i>X</i>	<i>X</i>									

(Redox)
EH
X
X
X
X

Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.
Relinquished by: <i>Dei... [Signature]</i>	Date/Hr: <i>9/18/98 1455</i>	Received by: <i>[Signature]</i>	Date/Hr: <i>9/18/98 14:55</i>
Received for CytoCulture Lab by:	Date/Hr:	CytoCulture Tel: 510-233-0102 Lab Services Fax: 510-233-3777	Please fax Chain of Custody form to CytoCulture prior to delivery.

CytoCulture

ENVIRONMENTAL
BIOTECHNOLOGY

CytoCulture International, Inc. 1986

Client: Subsurface Consultants
Contact: Meg Mendoza/ Jeri Alexander
3736 Mt Diablo Blvd. Suite 200
Lafayette, CA 94549

September 24, 1998 Cyto ID#: 98-76
Fax: (925)-299-7970 **Phone:** (925) 299-7960
Project Description: Port of Oakland
Project #: 133.009

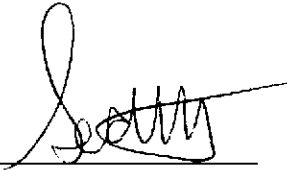
SAMPLES: 2 water samples were received on 9/23/98. The samples were assayed on 9/23/98, and stored at 4°C for any follow up work.

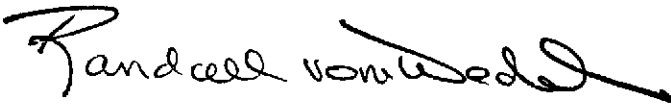
DO, pH, and Redox Potential

ANALYSIS REQUEST: Analyses for pH, Dissolved oxygen (DO) and Redox Potential (ORP) for water samples.

PROTOCOLS: pH was measured by Standard Methods: SM 4500-H+B
Redox Potential was measured by Standard Methods: SM 2580B
Dissolved Oxygen was measured by Standard Methods: SM 4500-OG
All measurements were performed on 9/23/98.

Client Sample	Sample Date	pH	DO (mg/L)	ORP (mV)
SCIMW-6	8/23/98	6.2	2.6	+223
SCIMW-11	8/23/98	6.5	3.5	+123


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performed by

CytoCulture Environmental Biotechnology

CHAIN OF CUSTODY FORM

Project Name: <i>9th Ave. Terminal</i>	Project No. <i>133.009</i>	Subsurface Purchase Order / LOG IN #:
Subsurface Client Organization: <i>Port of Oakland</i>		Subsurface Project Manager: <i>Jeri Alexander</i>
Address to Send Results: <i>3736 Mt. Diablo Blvd Ste. 200 Lafayette Ca, 945</i>		
Client Fax for Sending Data: <i>(925) 299-7970</i>		Client Contact / Project Manager: <i>Mary Mendoza / Jeri Alexander</i>
Client Tel for Follow-up: <i>(925) 299-7960</i>		Client Sampler / Recorder: <i>Dennis Alexander</i>

Sample ID	Sampling		Matrix		Bacterial Plate Enumerations				Bacterial MPN Enumerations			Nutrient / Chemical Assays										
	Date	Time	Soil	Water	Aerobic Hydrocarbon Degraders	Total Heterotrophs	Anaerobic Hydrocarbon Degraders	Total Heterotrophs	Anaerobic Nitrate Reducers	Iron Reducers	Sulfate Reducers	pH	mV	DO	NH3	PO4	NO3	SO4	Sulfide	Fe(II)	Fe(III)	
SCIMW-6	9/23/98	1030		X								X	X									
SCIMW-11	9/23/98	1230		X								X	X									

Redox Potential
EH
X
X

Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.
Relinquished by: <i>Dei-Olyard</i>	Date/Hr: <i>9/23/98 1445</i>	Received by: <i>[Signature]</i>	Date/Hr: <i>9/23/98 2:45PM</i>
Received for CytoCulture Lab by:	Date/Hr:	CytoCulture Tel: 510-233-0102 Lab Services Fax: 510-233-3777	Please fax Chain of Custody form to CytoCulture prior to delivery.

CytoCulture

ENVIRONMENTAL
BIOTECHNOLOGY

CytoCulture International, Inc. 1986

Client: Subsurface Consultants
Contact: Meg Mendoza/ Jeri Alexander
3736 Mt Diablo Blvd. Suite 200
Lafayette, CA 94549

September 28, 1998 Cyto ID#: 98-78
Fax: (925)-299-7970 **Phone:** (925) 299-7960
Project Description: Port of Oakland
Project #: 133.009

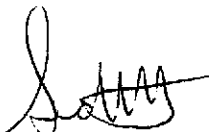
SAMPLES: 2 water samples were received on 9/24/98. The samples were assayed on 9/24/98, and stored at 4°C for any follow up work.

DO, pH, and Redox Potential

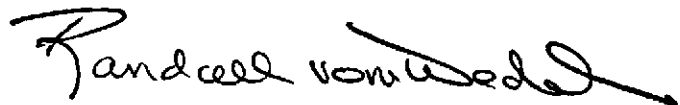
ANALYSIS REQUEST: Analyses for pH, Dissolved oxygen (DO) and Redox Potential (ORP) for water samples.

PROTOCOLS: pH was measured by Standard Methods: SM 4500-H+B
Redox Potential was measured by Standard Methods: SM 2580B
Dissolved Oxygen was measured by Standard Methods: SM 4500-OG
All measurements were performed on 9/24/98.

Client Sample	Sample Date	pH	DO (mg/L)	ORP (mV)
SCIMW-23	8/24/98	6.1	1.2	-50
SCIMW-34	8/24/98	6.3	3.3	-15



Sean P. Bushart, Ph.D.
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Laboratory Services



Randall von Wedel, Ph.D.
Principal Biochemist and
Director of Research

Subsurface Consultants

Subcontracted Microbiology Assays
performed by

CytoCulture Environmental Biotechnology

CHAIN OF CUSTODY FORM

Project Name: <i>9th Ave. Terminal</i>	Project No. <i>133009</i>	Subsurface Purchase Order / LOG IN #:
Subsurface Client Organization: <i>Port of Oakland</i>		Subsurface Project Manager: <i>Sei Alexander</i>
Address to Send Results: <i>3736 Mt Diablo Blvd., Ste 200 Lafayette, Ca. 94549</i>		
Client Fax for Sending Data: <i>(925) 299-7970</i>		Client Contact / Project Manager: <i>Meq</i>
Client Tel for Follow-up: <i>(925) 299-7960</i>		Client Sampler / Recorder: <i>Dennis Alexander</i>

Sample ID	Sampling		Matrix		Bacterial Plate Enumerations				Bacterial MPN Enumerations			Nutrient / Chemical Assays										
	Date	Time	Soil	Water	Aerobic Hydrocarbon Degraders	Total Heterotrophs	Anaerobic Hydrocarbon Degraders	Total Heterotrophs	Anaerobic Nitrate Reducers	Iron Reducers	Sulfate Reducers	pH	mV	DO	NH3	PO4	NO3	SO4	Sulfide	Fe(II)	Fe(III)	
<i>SC1Mw-23</i>	<i>9/24/98</i>	<i>1300</i>		<i>X</i>								<i>X</i>	<i>X</i>									
<i>SC1Mw-34</i>	<i>9/24/98</i>	<i>1215</i>		<i>X</i>								<i>X</i>	<i>X</i>									

Re-Dox
(EH)
X
X

Chain of Custody Record		Signature of this form constitutes a firm Purchase Order for services.		Payment DUE on Reporting Date.	
Relinquished by: <i>Dennis Alexander</i>	Date/Hr: <i>9/24/98 1510</i>	Received by: <i>[Signature]</i>	Date/Hr: <i>9/24/98 3:10</i>		
Received for CytoCulture Lab by:	Date/Hr:	CytoCulture Lab Services Tel: 510-233-0102 Fax: 510-233-3777	Please fax Chain of Custody form to CytoCulture prior to delivery.		