Southern Property Boundary Quarterly Groundwater Sampling 1999

Former O'Brien Corporation
450 East Grand Avenue
South San Francisco, CA

February 24, 2000

Prepared by:

Henshaw Associates, Inc.
Environmental Engineering Services

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Environmental Engineering Services

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Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Southern Property Boundary Quarterly Groundwater Sampling, 1999
The Former O'Brien Corporation Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency Region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for the former O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), quarterly groundwater monitoring for 1999 has been completed by Henshaw Associates, Inc. (Henshaw). Groundwater monitoring was completed by Henshaw on behalf of Cherokee San Francisco, L.L.C. and Cherokee Grand Avenue, L.L.C. (collectively "Cherokee"), the current owners of the Property. The monitoring is designed to evaluate groundwater along the southern boundary of the Property by sampling existing monitoring wells.

In keeping with our conversation of May 26, 1998, and previous submittals, the results of quarterly monitoring for 1999 have been incorporated in this letter.

SITE SETTING

The Property is located at 450 East Grand Avenue in South San Francisco, California, and includes the land occupied by the ICI Paint manufacturing facility (Figures 1 and 2). The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The property is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

GEOLOGY

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay

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deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as Bay Mud. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

HYDROGEOLOGY

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of the monitoring wells sampled during 1999 was 25 feet BGS.

FIELD ACTIVITIES

Sampling of the Southern Boundary groundwater was conducted on March 10, June 30, September 21, and December 29, 1999. Three monitoring wells were sampled including MW-21, PM-09, and PM-14. Water levels were taken from the three wells prior to initiation of well purging. Table 1 presents well construction details and depth to water measurements. Monitoring wells were purged with dedicated tubing and a peristaltic pump, and sampled with dedicated bailers. Samples were collected from PM-09 and PM-14 when the monitoring wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes. MW-21, which was purged dry, was sampled after three hours were allowed to elapse. Samples were analyzed in accordance with the Workplan for priority pollutant metals (PPMs) by EPA 6000/7000, volatile organic compounds (VOCs) by EPA 8240, and semivolatile organic compounds (SVOCs) by EPA 8270. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 5-micron filters and field preserved for dissolved analysis. Field parameters were recorded and are presented in Table 2.

ANALYTICAL RESULTS

In the following discussion, metals results are presented in mg/L or parts per million while VOCs and SVOCs are presented in µg/L or parts per billion. Samples field preserved but not field filtered are discussed as "total" metals samples while field filtered, preserved samples are termed "dissolved".

Metals

Complete metals analytical results for the quarterly sampling events in 1999 are presented in Table 3. Antimony was detected during the first two quarterly sampling events in all total and dissolved metals samples, except the duplicate dissolved metals sample from PM-09 on March 10, ranging in concentrations from 0.00011 mg/L (dissolved metals sample from PM-14 on March 10) to 0.0216 mg/L (total metals sample collected from MW-21 on June 30). During the last two quarterly sampling events, antimony was detected in the total and dissolved metals samples collected at MW-21 and one dissolved metals sample collected at PM-14 on September 21 at concentrations ranging from 0.06 mg/L (PM-14) to 0.09 mg/L (total metals sample from MW-21 on September 21). Arsenic was detected during the first two quarterly sampling events

in all total and dissolved metals samples ranging in concentrations from 0.001 mg/L (dissolved primary metals sample collected from PM-09 on March 10) to 0.074 mg/L (dissolved metals sample collected from MW-21 on March 10). However, arsenic was only detected in one set of total and dissolved metals samples (MW-21 on December 29) during the last two quarterly sampling events at concentrations of 0.06 and 0.072 mg/L, respectively. Cadmium and copper were detected in all total and dissolved metals samples collected from MW-21, PM-09 and PM-14 during the March and June quarterly sampling events at very low levels but not detected in the September and December quarterly sampling events. Chromium was only detected in the total metals samples collected from PM-09 and PM-14, except the duplicate metals sample collected from PM-09 on December 29, at concentrations ranging from 0.008 mg/L to 0.479 mg/L.

Lead was detected in all total and dissolved metals samples collected from the three wells sampled during the first two quarterly sampling events and only in the total metals samples collected from PM-09 during the last two quarterly sampling events. The range of detected lead concentrations for the total metals samples was 0.00127 mg/L to 1.7 mg/L. Compared to the range of dissolved metals samples of 0.00022 mg/L to 0.0596 mg/L. This reflects that a large portion of the detected lead in the total lead samples is sorbed to soil particles and is not mobile. Mercury was detected in total metals samples collected from the PM-09 and PM-14 during the second and fourth quarterly sampling events, and dissolved metals samples collected from PM-09 in the fourth quarterly sampling event at very low levels. Nickel was detected in all metals samples collected during the March and June quarterly sampling events, with maximum detection in the total metals sample collected from PM-14 on June 30 at 0.144 mg/L. During the September and December quarterly sampling events, nickel was detected in a few total metals samples collected from PM-09 and PM-14 at concentrations ranging from 0.03 mg/L (duplicate metals sample collected from PM-09 in September) to 0.08 mg/L (metals sample collected from PM-14 in December). Selenium was only detected in the duplicate total metals sample collected from PM-09 on March 10 at 0.002 mg/L. Zinc was detected in all metals samples collected during the first two quarterly sampling events and several of metals samples collected during the last two quarterly sampling events from all three wells at concentrations ranging from 0.011 mg/L (total metals sample collected from MW-21 on March 10) to 0.648 mg/L (duplicate total metals sample collected from PM-09 on June 30). Beryllium, silver, and thallium were detected in several metals samples collected during the first two quarterly sampling events at very low levels.

Volatile Organic Compounds

Volatile organic compounds (Table 4) acetone, benzene, 2-butanone, chlorobenzene, ethylbenzene, and total xylenes were detected in samples collected only from PM-09. Acetone was only detected in the primary and duplicate samples collected on June 30 at 5 and 4 µg/L, respectively. Concentrations of 2-butanone were detected only in the primary and duplicate samples collected on September 21 at 6 µg/L each, just above the laboratory detection limit of 5 µg/L. Benzene continually decreased in detected concentrations in the samples collected during successive quarterly sampling events from a maximum concentration of 89 µg/L, in the primary sample collected on March 10, to 2.4 µg/L, in the primary and duplicate samples collected on

December 29. Concentrations of ethylbeneze also decreased between successive quarterly sampling events from 14 and 13 µg/L in the primary and duplicate samples collected on March 10, respectively, to 4 µg/L each in the primary and duplicates samples collected on June 30. During the September and December quarterly sampling events, ethylbenzene was not detected (<0.5 µg/L) in either the primary or duplicate samples. Total xylenes concentrations decreased over two orders of magnitude during the course of the four quarterly groundwater sampling events. Total xylenes concentrations were at a maximum of 400 µg/L in the primary sample collected on March 10 and at a minimum of 2.6 µg/L in the duplicate sample collected on December 29. Volatile organic compounds were not detected in any of the samples collected from MW-21 and PM-14 during 1999.

Semivolatile Organic Compounds

2-Methylnaphthalene was detected in the sample collected from PM-09 on June 30 at 7 µg/L (duplicate) and in the samples collected on September 21 at 8 and 7 µg/L (primary and duplicate respectively). Isophorone was detected during the March and September quarterly sampling rounds in samples collected from MW-21 at a concentration of 30 and 7 µg/L, respectively. No other semivolatile organic compounds were detected in the rest of the samples collected from the three monitoring wells during the four quarterly sampling events in 1999 (Table 5).

Quality Control Samples

Relative percent difference (RPD) comparison between primary and duplicate samples collected from PM-09 during quarterly sampling events revealed that project targets for dissolved and total metals (detections at greater than four times the laboratory reporting limit have a RPD less then or equal to 30%) were met (Table 6) except for total zinc (37% on September 21), dissolved zinc (90% and 108% in June 30 and March 10, respectively), dissolved copper (55% on June 30), dissolved lead (53% on June 30), and total cadmium (71% on March 10). The large difference between dissolved zinc concentrations found in the primary and duplicate samples collected during the first quarterly sampling event was reported to the analytical laboratory (Columbia Analytical Services). Zinc has not been a constituent of concern at this site and was detected in samples collected from PM-09 at such low levels that the large RPD is not of concern.

Inspection of the laboratory analytical report package for the June quarterly sampling event revealed that the laboratory analyzed an internal "laboratory" duplicate sample for HA20QM399 (the duplicate sample for PM-09). The RPDs for the laboratory duplicate were very low (less then or equal to 15%). Additionally, the laboratory performed multiple extractions for the filtered samples and results were consistent between extracts.

Based upon the results of RPD analysis of non-filtered samples and internal laboratory quality control results, the out of target RPDs for filtered samples from June 30 appeared to be attributable to filter problems. To mitigate this problem, Henshaw purchased filters from a different manufacturer for the next round of groundwater sampling. With the new filter, only total zinc on September 21 at 37% was slightly above of the 30% RPD project goal. Columbia Analytical Laboratory has consistently had high RPD values for zinc.

Only three VOCs were available for comparison of RPDs: benzene, ethylbenzene, and total xylenes (Table 7). The RPD for all three VOCs were acceptable. There were no VOCs detected in the trip blank samples submitted during the four quarterly sampling rounds for 1999. Only one semivolatile organic compound, 2-methylnaphthalene on September 21, was detected in both samples collected from PM-09 and was found to have an acceptable RPD.

WATER LEVELS

Water levels taken during each successive quarterly monitoring event during 1999 are presented on Table 1 and Figures 3 - 6. The monitored wells are linearly arranged on an east-west axis and do not provide information on north-south trends in groundwater flow. Based upon the first two quarterly monitoring readings, the groundwater surface had an easterly trend ranging from approximately 0.0021 ft/ft (March 10) to 0.0017 ft/ft (June 30). Based upon the last two quarterly monitoring readings, the groundwater surface had a westerly trend of approximately 0.0052 ft/ft (September 21 and December 29). The apparent change in groundwater trend may be attributable to the relatively dry summer and fall months during 1999, and tidal influences at the time the water level measurements were collected.

SUMMARY

Low concentrations of metals were detected in water samples collected from MW-21, PM-09 and PM-14. Concentrations of dissolved, and thus mobile, metals detected in samples collected during monitoring activities continue to be at very low levels. Concentrations of benzene, ethylbenzene and total xylenes detected in samples collected from PM-09 decreased dramatically over the course of the quarterly sampling events. Only the semivolatile organic compounds isophorone and 2-methylnaphthalene was detected in samples collected during 1999.

Based upon the results of the quarterly monitoring events for 1999, it is apparent that there are not significant levels of mobile metals moving within the shallow groundwater beneath the subject property. Decreasingly low levels of volatile organic compounds can be found in groundwater proximate to monitoring well PM-09.

Please contact me at (925) 551-7272 with any questions.

Respectfully submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Well Construction Details and Water Levels
Table 2	Field Parameters
Table 3	Metals Analytical Summary
Table 4	Volatile Organic Compounds Analytical Summary
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Table 6	Relative Percent Difference Analyses for Metals
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Figure 1	Site Vicinity Map
Figure 2	Site Map
Figure 3	First Quarter 1999 Water Level Map
Figure 4	Second Quarter 1999 Water Level Map
Figure 5	Third Quarter 1999 Water Level Map
Figure 6	Fourth Quarter 1999 Water Level Map
Appendix A	Laboratory Analytical Reports

cc: Mr. Mike Bertrand, Cherokee Environmental Risk Management
Mr. Fasil Tegene, 1CI

TABLES

Henshaw Associates, Inc.

TABLE 1
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California

Well ID	Installation Date	Stick Up (ft.)	Total Depth[1] (ft. BMP)	Total Depth[2] (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch)
MW-21	9/2/1987	2.0	24.7	22.7	12.24	13.0	23.0	10.0	25.0	4
PM-09	8/28/1987	2.0	14.8	12.8	10.07	8.0	13.0	5.0	13.5	2
PM-14	12/10/1993	0.0	9.8	9.8	9.35	7.0	12.0	6.0	10.0	2

Well ID	Depth to Water 3/10/99 (ft. BMP)	Groundwater Elevation 3/10/99 (ft. MSL)	Depth to Water 6/30/99 (ft. BMP)	Groundwater Elevation 6/30/99 (ft. MSL)	Change in Groundwater Elevation from 3/10/99 to 6/30/99 (feet)	Depth to Water 9/21/99 (ft. BMP)	Groundwater Elevation 9/21/99 (ft. MSL)	Change in Groundwater Elevation from 6/30/99 to 9/21/99 (feet)	Depth to Water 12/29/99 (ft. BMP)	Groundwater Elevation 12/29/99 (ft. MSL)	Change in Groundwater Elevation from 9/21/99 to 12/29/99 (feet)
MW-21	9.99	2.25	6.30	5.94	3.69	6.97	5.27	-0.67	6.93	5.31	0.04
PM-09	5.06	5.01	5.75	4.32	-0.69	4.71	5.36	1.04	3.51	6.56	1.20
PM-14	2.85	6.50	4.35	5.00	-1.50	7.67	1.68	-3.32	6.47	2.88	1.20

Note:
BGS Below ground surface
BMP Below measuring point
MSL Mean sea level
[1] Depth measured in the field
[2] Depth from boring logs

TABLE 2
FIELD PARAMETERS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California

	QM1-99			QM2-99			QM3-99			QM4-99		
Sample Location	MW-21	PM-09	PM-14	MW-21	PM-09	PM-14	MW-21	PM-09	PM-14	MW-21	PM-09	PM-14
Measurement Date	3/10/1999	3/10/1999	3/10/1999	6/30/1999	6/30/1999	6/30/1999	9/21/1999	9/21/1999	9/21/1999	12/30/1999	12/30/1999	12/30/1999
pH	7.08	9.01	8.87	7.11	7.14	7.17	7.30	7.60	7.85	7.11	7.14	7.17
Conductance (µmhos/cm)	4510	3580	1110	2850	2100	713	3240	2880	1340	2850	2100	713
Temperature (°F)	63.6	63.2	57.6	74.1	68.9	71.1	70.3	67.8	70.6	74.1	68.9	71.1

Note:
BGS Below ground surface

Henshaw Associates, Inc.

TABLE 3
METALS ANALYTICAL SUMMARY
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	Total (T) or Disolved (D)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
MCL					0.006	0.05	0.004	0.005	0.05	11	0.05	0.002	0.1	0.05	0.1	0.002	5
MW-21	MW21QM499	12/29/1999	No	T	**0.08**	**0.072**	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0002	<0.02	<0.05	<0.02	<0.05	**0.03**
MW-21	MW21QM499	12/29/1999	No	D	**0.08**	**0.06**	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0002	<0.02	<0.05	<0.02	<0.05	**0.03**
MW-21	MW21QM399	9/21/1999	No	T	**0.09**	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0005	<0.02	<0.05	<0.02	<0.05	<0.02
MW-21	MW21QM399	9/21/1999	No	D	**0.07**	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0005	<0.02	<0.05	<0.02	<0.05	<0.02
MW-21	MW21QM299	6/30/1999	No	T	**0.0216**	**0.036**	<0.00004	**0.00047**	<0.004	**0.00367**	**0.0539**	<0.0002	**0.0141**	<0.002	**0.00003**	<0.00004	**0.0534**
MW-21	MW21QM2999(F)	6/30/1999	No	D	**0.0183**	**0.023**	<0.00004	**0.00033**	<0.004	**0.00292**	**0.00072**	<0.0005	**0.0076**	<0.002	**0.00003**	<0.00004	**0.0189**
MW-21	MW21QM199	3/10/1999	No	T	**0.016**	**0.068**	<0.00002	**0.00005**	<0.005	**0.0013**	**0.00358**	<0.0002	**0.0071**	<0.005	**0.00005**	<0.00002	**0.011**
MW-21	MW21QM199F	3/10/1999	No	D	**0.0158**	**0.074**	**0.00002**	**0.00005**	<0.005	**0.0018**	**0.00053**	<0.0005	**0.0065**	<0.005	**0.00003**	<0.00002	**0.0286**
PM-09	PM09QM499	12/29/1999	No	T	<0.05	<0.05	<0.005	<0.005	**0.02**	<0.01	**0.4**	**0.0002**	<0.02	<0.05	<0.02	<0.05	**0.35**
PM-09	PM09QM499	12/29/1999	No	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	**0.0002**	<0.02	<0.05	<0.02	<0.05	**0.21**
PM-09	HA20QM499	12/29/1999	Yes	T	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	**0.14**	**0.0007**	<0.02	<0.05	<0.02	<0.05	**0.04**
PM-09	HA20QM499	12/29/1999	Yes	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	**0.0003**	<0.02	<0.05	<0.02	<0.05	**0.05**
PM-09	PM09QM399	9/21/1999	No	T	<0.05	<0.05	<0.005	<0.005	**0.04**	**0.03**	**0.85**	<0.0005	**0.04**	<0.05	<0.02	<0.05	**0.29**
PM-09	PM09QM399	9/21/1999	No	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0005	<0.02	<0.05	<0.02	<0.05	<0.02
PM-09	HA20QM399	9/21/1999	Yes	T	<0.05	<0.05	<0.005	<0.005	**0.03**	<0.01	**0.64**	<0.0005	**0.03**	<0.05	<0.02	<0.05	**0.2**
PM-09	HA20QM399	9/21/1999	Yes	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0005	<0.02	<0.05	<0.02	<0.05	<0.02
PM-09	PM09QM299	6/30/1999	No	T	**0.00106**	**0.011**	**0.00016**	**0.00268**	**0.093**	**0.0212**	**1.58**	**0.0007**	**0.0604**	<0.002	**0.00003**	**0.00006**	**0.553**
PM-09	PM09QM299(F)	6/30/1999	No	D	**0.00077**	**0.003**	**0.00003**	**0.00023**	<0.004	**0.0027**	**0.0596**	<0.0002	**0.0063**	<0.002	**0.00472**	<0.00002	**0.0383**
PM-09	HA20QM299	6/30/1999	Yes	T	**0.00107**	**0.012**	**0.00019**	**0.00327**	**0.108**	**0.0254**	**1.7**	**0.0006**	**0.065**	<0.002	**0.00004**	**0.00006**	**0.648**
PM-09	HA20QM299(F)	6/30/1999	Yes	D	**0.00062**	**0.003**	**0.00002**	**0.0002**	<0.004	**0.00153**	**0.0347**	<0.0002	**0.0056**	<0.002	<0.00002	<0.00002	**0.0146**
PM-09	PM09QM199	3/10/1999	No	T	**0.00052**	**0.002**	**0.00006**	**0.00023**	**0.01**	**0.0023**	**0.0831**	<0.0002	**0.0078**	<0.005	**0.00004**	<0.00002	**0.0377**
PM-09	PM09QM199F	3/10/1999	No	D	**0.00045**	**0.001**	**0.00005**	**0.00003**	<0.005	**0.0005**	**0.003**	<0.0002	**0.0033**	<0.005	<0.00002	<0.00002	**0.0087**
PM-09	HA20QM199	3/10/1999	Yes	T	**0.00047**	**0.002**	**0.00005**	**0.00011**	**0.01**	**0.0019**	**0.0688**	<0.0002	**0.0069**	**0.002**	<0.00002	<0.00002	**0.0308**
PM-09	HA20QM199F	3/10/1999	Yes	D	<0.00002	**0.001**	**0.00005**	**0.00004**	<0.005	**0.001**	**0.00314**	<0.0002	**0.0034**	<0.005	<0.00002	<0.00002	**0.029**
PM-14	PM14QM499	12/29/1999	No	T	<0.1	<0.005	<0.005	<0.01	**0.05**	<0.01	<0.05	**0.0008**	**0.08**	<0.05	<0.02	<0.05	**0.06**
PM-14	PM14QM499	12/29/1999	No	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0002	<0.02	<0.05	<0.02	<0.05	**0.38**
PM-14	PM14QM399	9/21/1999	No	T	**0.06**	<0.05	<0.005	<0.005	**0.01**	<0.01	<0.05	<0.0005	**0.04**	<0.05	<0.02	<0.05	**0.09**
PM-14	PM14QM399	9/21/1999	No	D	<0.05	<0.05	<0.005	<0.005	<0.01	<0.01	<0.05	<0.0005	<0.02	<0.05	<0.02	<0.05	<0.02
PM-14	PM14QM299	6/30/1999	No	T	**0.00019**	**0.005**	**0.00027**	**0.00032**	**0.479**	**0.0154**	**0.0252**	**0.0002**	**0.144**	<0.002	**0.00006**	**0.00007**	**0.0297**
PM-14	PM14QM299(F)	6/30/1999	No	D	**0.00029**	**0.003**	<0.00002	**0.00011**	<0.006	**0.00219**	**0.00107**	<0.0002	**0.0097**	<0.002	<0.00002	<0.00002	**0.0221**
PM-14	PM14QM199	3/10/1999	No	T	**0.00013**	**0.005**	**0.00002**	**0.00023**	**0.008**	**0.0013**	**0.00127**	<0.0002	**0.0113**	<0.005	**0.00004**	<0.00002	**0.0179**
PM-14	PM14QM199F	3/10/1999	No	D	**0.00011**	**0.002**	<0.00002	**0.00002**	<0.005	**0.0009**	**0.00022**	<0.0002	**0.0052**	<0.005	<0.00002	**0.00004**	**0.0143**

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level

Henshaw Associates, Inc.

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,4-Trichlorobenzene	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	2-Hexanone	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride
MCL				200	1	5	6	70	0.05	600	0.5	5	NE	5	NE	NE	NE	NE	NE	1	NE	NE	NE	NE	0.5
MW-21	MW21QM499	12/29/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-21	MW21QM399	9/21/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-21	MW21QM299	6/30/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<5	<2	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-21	MW21QM199	3/10/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PM-09	PM09QM499	12/29/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	**0.7**	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	**2.4**	<0.5	<0.5	<0.5	<0.5	<0.5
PM-09	HA20QM499	12/29/1999	Yes	<0.5	<0.5	<0.5	<0.5	<2	<2	**0.7**	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	**2.4**	<0.5	<0.5	<0.5	<0.5	<0.5
PM-09	PM09QM399	9/21/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	**0.8**	<0.5	<0.5	<0.5	<0.5	**6**	<5	<5	<5	<5	**4.9**	<0.5	<0.5	<0.5	<0.5	<0.5
PM-09	HA20QM399	9/21/1999	Yes	<0.5	<0.5	<0.5	<0.5	<2	<2	**1**	<0.5	<0.5	<0.5	<0.5	**6**	<5	<5	<5	<5	**6.6**	<0.5	<0.5	<0.5	<0.5	<0.5
PM-09	PM09QM299	6/30/1999	No	<1	<1	<1	<1	<4	<4	**1**	<1	<1	<1	<1	<4	<4	<10	**5**	<10	**45**	<1	<1	<1	<1	<1
PM-09	HA20QM299	6/30/1999	Yes	<1	<1	<1	<1	<4	<4	**1**	<1	<1	<1	<1	<4	<4	<10	**4**	<10	**49**	<1	<1	<1	<1	<1
PM-09	PM09QM199	3/10/1999	No	<2.5	<2.5	<2.5	<2.5	<10	<10	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<25	<25	<100	<25	**89**	<2.5	<2.5	<2.5	<2.5	<2.5
PM-09	HA20QM199	3/10/1999	Yes	<1	<1	<1	<1	<4	<4	**2**	<1	<1	<1	<1	<10	<10	<10	<40	<10	**81**	<1	<1	<1	<1	<1
PM-14	PM14QM499	12/29/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PM-14	PM14QM399	9/21/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PM-14	PM14QM299	6/30/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2	<5	<2	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PM-14	PM14QM199	3/10/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<20	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

Henshaw Associates, Inc.

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
Cherokee
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Chlorotoluene, o-	cis-1,2-DCE	cis-1,3-Dichloropropene	Dibromochloromethane	Dichlorodifluoromethane	Ethylbenzene	Freon 11	Hexachlorobutadiene	Methylene chloride	Naphthalene	Styrene	Tetrachloroethene	Toluene	Total xylenes	trans-1,2-DCE	trans-1,3-Dichloropropene	Trichloroethene	Vinyl Acetate	Vinyl chloride
MCL				NE	NE	NE	NE	NE	6	NE	NE	NE	700	150	NE	5	NE	100	5	150	1750	10	NE	5	NE	0.5
MW-21	MW21QM499	12/29/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
MW-21	MW21QM399	9/21/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
MW-21	MW21QM299	6/30/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5
MW-21	MW21QM199	3/10/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
PM-09	PM09QM499	12/29/1999	No	**1.1**	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	**2.8**	<0.5	<0.5	<0.5	<5	<0.5
PM-09	HA20QM499	12/29/1999	Yes	**1**	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	**2.6**	<0.5	<0.5	<0.5	<5	<0.5
PM-09	PM09QM399	9/21/1999	No	**1.2**	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	**6.8**	<0.5	<0.5	<0.5	<5	<0.5
PM-09	HA20QM399	9/21/1999	Yes	**1.2**	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	**8.7**	<0.5	<0.5	<0.5	<5	<0.5
PM-09	PM09QM299	6/30/1999	No	**1**	<1	<1	<1	<4	<1	<1	<1	<1	**4**	<1	<4	<2	<4	<1	<1	<1	**130**	<1	<1	<1	<4	<1
PM-09	HA20QM299	6/30/1999	Yes	<1	<1	<1	<1	<4	<1	<1	<1	<1	**4**	<1	<4	<2	<4	<1	<1	<1	**140**	<1	<1	<1	<4	<1
PM-09	PM09QM199	3/10/1999	No	<2.5	<2.5	<2.5	<2.5	<10	<2.5	<2.5	<2.5	<2.5	**14**	<2.5	<10	<5	<10	<2.5	<2.5	<2.5	**400**	<2.5	<2.5	<2.5	<25	<2.5
PM-09	HA20QM199	3/10/1999	Yes	<1	<1	<1	<1	<4	<1	<1	<1	<1	**13**	<1	<4	<2	<4	<1	<1	<1	**370**	<1	<1	<1	<10	<1
PM-14	PM14QM499	12/29/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
PM-14	PM14QM399	9/21/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
PM-14	PM14QM299	6/30/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5
PM-14	PM14QM199	3/10/1999	No	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

Henshaw Associates, Inc.

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	1,2,4-Trichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methyl-4,6-dinitrophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3-Dichlorobenzidine	3,4-Methylphenol	3-Nitroaniline	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline
MCL				70	NE	5	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-21	MW21QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
MW-21	MW21QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
MW-21	MW21QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
MW-21	MW21QM199	3/10/1999	No	<5	<5	<5	<5	<5	<50	<10	<50	<50	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	PM09QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	HA20QM499	12/29/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	PM09QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	**8**	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	HA20QM399	9/21/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	**7**	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	PM09QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	HA20QM299	6/30/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	**7**	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	PM09QM199	3/10/1999	No	<5	<5	<5	<5	<5	<50	<10	<50	<50	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-09	HA20QM199	3/10/1999	Yes	<5	<5	<5	<5	<5	<50	<10	<50	<50	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-14	PM14QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-14	PM14QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-14	PM14QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<50	<5	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5
PM-14	PM14QM199	3/10/1999	No	<5	<5	<5	<5	<5	<50	<10	<50	<50	<5	<5	<5	<20	<5	<5	<20	<5	<20	<5	<20	<5	<5	<5

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	Bis(2-chloroethoxy) methane	bis(2-Chloroethyl) ether	Bis(2-chloroisopropyl) Ether	bis(2-Ethylhexyl) phthalate	Butyl benzyl phthalate	Chrysene	Di-n-butyl phthalate	Di-n-octyl phthalate	Dibenzo(a,h)anthracene
MCL				NE	NE	NE	NE	NE	NE	NE	0	NE	NE	NE	NE	NE	NE	NE	NE	4	NE	NE	NE	NE	NE
MW-21	MW21QM499	12/29/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-21	MW21QM399	9/21/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-21	MW21QM299	6/30/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-21	MW21QM199	3/10/1999	No	<20	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	PM09QM499	12/29/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	HA20QM499	12/29/1999	Yes	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	PM09QM399	9/21/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	HA20QM399	9/21/1999	Yes	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	PM09QM299	6/30/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	HA20QM299	6/30/1999	Yes	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	PM09QM199	3/10/1999	No	<20	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-09	HA20QM199	3/10/1999	Yes	<20	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-14	PM14QM499	12/29/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-14	PM14QM399	9/21/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-14	PM14QM299	6/30/1999	No	<20	<50	<5	<5	<6	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
PM-14	PM14QM199	3/10/1999	No	<20	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	Field Sample ID	Sample Date	Duplicate (Yes/No)	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	N-Nitroso-di-n-propylamine	N-Nitrosodimethylamine	N-Nitrosodiphenylamine	Naphthalene	Nitrobenzene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene
MCL				NE	NE	NE	NE	NE	1	NE	50	NE	NE	NE	NE	NE	NE	NE	NE	1	NE	NE	NE
MW-21	MW21QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
MW-21	MW21QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	**7**	<5	<5	<5	<5	<5	<30	<5	<5	<5
MW-21	MW21QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
MW-21	MW21QM199	3/10/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	**30**	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	PM09QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	HA20QM499	12/29/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	PM09QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	HA20QM399	9/21/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	PM09QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	HA20QM299	6/30/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	PM09QM199	3/10/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-09	HA20QM199	3/10/1999	Yes	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-14	PM14QM499	12/29/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-14	PM14QM399	9/21/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-14	PM14QM299	6/30/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5
PM-14	PM14QM199	3/10/1999	No	<5	<5	<5	<5	<5	<5	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<30	<5	<5	<5

Notes:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

Henshaw Associates, Inc.

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS FOR METALS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location	PM-09			PM-09			PM-09			PM-09		
Field Sample ID	PM09QM499	HA20QM499		PM09QM499	HA20QM499		PM09QM399	HA20QM399		PM09QM399	HA20QM399	
Sample Date	12/29/1999	12/29/1999		12/29/1999	12/29/1999		9/21/1999	9/21/1999	RPD	9/21/1999	9/21/1999	RPD
Duplicate (Yes/No)	No	Yes	RPD	No	Yes	RPD	No	Yes		No	Yes	
Total or Dissolved	Total			Dissolved			Total			Dissolved		
Antimony	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A
Arsenic	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A
Beryllium	<0.005	<0.005	N/A	<0.005	<0.005	N/A	<0.005	<0.005	N/A	<0.005	<0.005	N/A
Cadmium	<0.005	<0.005	N/A	<0.005	<0.005	N/A	<0.005	<0.005	N/A	<0.005	<0.005	N/A
Chromium	**0.02**	<0.01	**40%**	<0.01	<0.01	N/A	**0.04**	**0.03**	**29%**	<0.01	<0.01	N/A
Copper	<0.01	<0.01	N/A	<0.01	<0.01	N/A	**0.03**	<0.01	**57%**	<0.01	<0.01	N/A
Lead	**0.4**	**0.14**	**96%**	<0.05	<0.05	N/A	**0.85**	**0.64**	**28%**	<0.05	<0.05	N/A
Mercury	**0.0002**	**0.0007**	**111%**	**0.0002**	**0.0003**	**40%**	<0.0005	<0.0005	N/A	<0.0005	<0.0005	N/A
Nickel	<0.02	<0.02	N/A	<0.02	<0.02	N/A	**0.04**	**0.03**	**29%**	<0.02	<0.02	N/A
Selenium	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A
Silver	<0.02	<0.02	N/A	<0.02	<0.02	N/A	<0.02	<0.02	N/A	<0.02	<0.02	N/A
Thallium	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A	<0.05	<0.05	N/A
Zinc	**0.35**	**0.04**	**159%**	**0.21**	**0.05**	**123%**	**0.29**	**0.2**	**37%**	<0.02	<0.02	N/A
Min of Abs. RPD			0%			0%			28%			0%
Max of Abs. RPD			0%			0%			37%			0%

Notes:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs. Absolute value
RPD Relative percent difference calculated as: Absolute Value of (Primary Result-Duplicate Result)/(Mean of the both results)
In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent mixed detection/non-detection or detection below four times detection limit pairs and are included for comparison purposes only

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS FOR METALS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location	PM-09			PM-09			PM-09			PM-09		
Field Sample ID	PM09QM299	HA20QM299		PM09QM299	HA20QM299		PM09QM199	HA20QM199		PM09QM199	HA20QM199	
Sample Date	6/30/1999	6/30/1999	RPD	6/30/1999	6/30/1999	RPD	3/10/1999	3/10/1999	RPD	3/10/1999	3/10/1999	RPD
Duplicate (Yes/No)	No	Yes		No	Yes		No	Yes		No	Yes	
Total or Dissolved	Total			Dissolved			Total			Dissolved		
Antimony	**0.00106**	**0.00107**	**1%**	**0.00077**	**0.00062**	**22%**	**0.00052**	**0.00047**	**10%**	**0.00045**	<0.00002	**93%**
Arsenic	**0.011**	**0.012**	**9%**	**0.003**	**0.003**	**0%**	**0.002**	**0.002**	**0%**	**0.001**	**0.001**	**0%**
Beryllium	**0.00016**	**0.00019**	**17%**	**0.00003**	**0.00002**	**40%**	**0.00006**	**0.00005**	**18%**	**0.00005**	**0.00005**	**0%**
Cadmium	**0.00268**	**0.00327**	**20%**	**0.00023**	**0.0002**	**14%**	**0.00023**	**0.00011**	**71%**	**0.00003**	**0.00004**	**29%**
Chromium	**0.093**	**0.108**	**15%**	<0.004	<0.004	N/A	**0.01**	**0.01**	**0%**	<0.005	<0.005	N/A
Copper	**0.0212**	**0.0254**	**18%**	**0.0027**	**0.00153**	**55%**	**0.0023**	**0.0019**	**19%**	**0.0005**	**0.001**	**67%**
Lead	**1.58**	**1.7**	**7%**	**0.0596**	**0.0347**	**53%**	**0.0831**	**0.0688**	**19%**	**0.003**	**0.00314**	**5%**
Mercury	**0.0007**	**0.0006**	**15%**	<0.0002	<0.0002	N/A	<0.0002	<0.0002	N/A	<0.0002	<0.0002	N/A
Nickel	**0.0604**	**0.065**	**7%**	**0.00626**	**0.00556**	**12%**	**0.0078**	**0.0069**	**12%**	**0.0033**	**0.0034**	**3%**
Selenium	<0.002	<0.002	N/A	<0.002	<0.002	N/A	<0.005	**0.002**	**67%**	<0.005	<0.005	N/A
Silver	**0.00003**	**0.00004**	**29%**	**0.00472**	<0.00002	**99%**	**0.00004**	<0.00002	**40%**	<0.00002	<0.00002	N/A
Thallium	**0.00006**	**0.00006**	**0%**	<0.00002	<0.00002	N/A	<0.00002	<0.00002	N/A	<0.00002	<0.00002	N/A
Zinc	**0.553**	**0.648**	**16%**	**0.0383**	**0.0146**	**90%**	**0.0377**	**0.0308**	**20%**	**0.0087**	**0.029**	**108%**
Min of Abs. RPD			1%			0%			0%			0%
Max of Abs. RPD			20%			90%			71%			108%

Notes:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs. Absolute value
RPD Relative percent difference calculated as: Absolute Value of (Primary Result-Duplicate Result)/(Mean of the both results)
In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent mixed detection/non-detection or detection below four times detection limit pairs and are included for comparison purposes only

TABLE 7
RELATIVE PERCENT DIFFERENCE ANALYSIS FOR VOLATILE ORGANIC COMPPOUNDS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	PM-09			PM-09			PM-09			PM-09		
Field Sample ID	PM09QM499	HA20QM499		PM09QM399	HA20QM399		PM09QM299	HA20QM299		PM09QM199	HA20QM199	
Sample Date	12/29/1999		RPD	9/21/1999		RPD	6/30/1999		RPD	3/10/1999		RPD
Duplicate (Yes/No)	No	Yes		No	Yes		No	Yes		No	Yes	
1,1,1-Trichloroethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,1,2,2-Tetrachloroethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,1-Dichloroethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,1-Dichloroethene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,2,4-Trichlorobenzene	<2	<2	N/A	<2	<2	N/A	<4	<4	N/A	<10	<4	N/A
1,2-Dibromoethane	<2	<2	N/A	<2	<2	N/A	<4	<4	N/A	<10	<4	N/A
1,2-Dichlorobenzene	**0.7**	**0.7**	**0%**	**0.8**	**1**	**22%**	**1**	**1**	**0%**	**<2.5**	**2**	**15%**
1,2-Dichloroethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,2-Dichloropropane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,3-Dichlorobenzene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
1,4-Dichlorobenzene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
2-Butanone	<5	<5	N/A	**6**	**6**	**0%**	<4	<4	N/A	<25	<10	N/A
2-Hexanone	<5	<5	N/A	<5	<5	N/A	<4	<4	N/A	<25	<10	N/A
4-Methyl-2-pentanone	<5	<5	N/A	<5	<5	N/A	<10	<10	N/A	<25	<10	N/A
Acetone	<20	<20	N/A	<5	<5	N/A	**5**	**4**	**22%**	<100	<40	N/A
Acrylonitrile	<5	<5	N/A	<5	<5	N/A	<10	<10	N/A	<25	<10	N/A
Benzene	**2.4**	**2.4**	**0%**	**4.9**	**6.6**	**30%**	**45**	**49**	**9%**	**89**	**81**	**9%**
Bromodichloromethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Bromoform	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Bromomethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Carbon disulfide	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Carbon tetrachloride	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Chlorobenzene	**1.1**	**1**	**10%**	**1.2**	**1.2**	**0%**	**1**	**<1**	**0%**	<2.5	<1	N/A
Chloroethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Chloroform	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Chloromethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Chlorotoluene, o-	<2	<2	N/A	<2	<2	N/A	<4	<4	N/A	<10	<4	N/A
cis-1,2-DCE	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
cis-1,3-Dichloropropene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Dibromochloromethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Dichlorodifluoromethane	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Ethylbenzene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	**4**	**4**	**0%**	**14**	**13**	**7%**
Freon 11	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Hexachlorobutadiene	<2	<2	N/A	<2	<2	N/A	<4	<4	N/A	<10	<4	N/A
Methylene chloride	<1	<1	N/A	<1	<1	N/A	<2	<2	N/A	<5	<2	N/A
Naphthalene	<2	<2	N/A	<2	<2	N/A	<4	<4	N/A	<10	<4	N/A
Styrene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Tetrachloroethene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Toluene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Total xylenes	**2.8**	**2.6**	**7%**	**6.8**	**8.7**	**25%**	**130**	**140**	**7%**	**400**	**370**	**8%**
trans-1,2-DCE	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
trans-1,3-Dichloropropene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Trichloroethene	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Vinyl Acetate	<5	<5	N/A	<5	<5	N/A	<4	<4	N/A	<25	<10	N/A
Vinyl chloride	<0.5	<0.5	N/A	<0.5	<0.5	N/A	<1	<1	N/A	<2.5	<1	N/A
Min of Abs. RPD			0%			25%			0%			7%
Max of Abs. RPD			7%			30%			9%			9%

Notes:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs. Absolute value
RPD Relative percent difference calculated as: Absolute Value of (Primary Result-Duplicate Result)/(Mean of the both results)
In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent mixed detection/non-detection or detection below four times detection limit pairs and are included for comparison purposes only

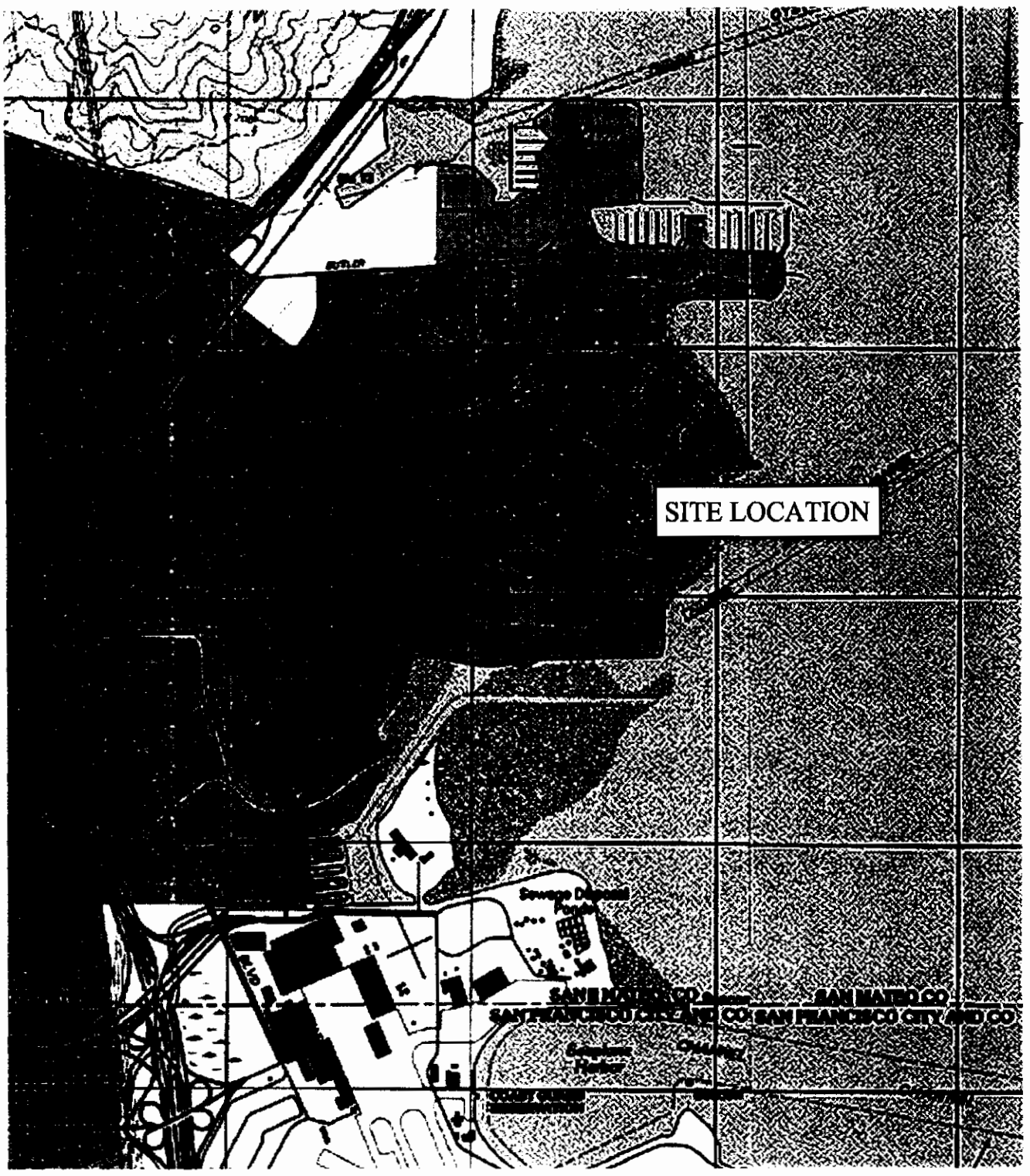
Henshaw Associates, Inc.

TABLE 8
RELATIVE PERCENT DIFFERENCE ANALYSIS FOR SEMIVOLATILE ORGANIC COMPPOUNDS
450 East Grand Avenue
The Cherokee Environmental Risk Management Property
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	PM-09			PM-09			PM-09			PM-09		
Field Sample ID	HA20QM499	PM09QM499		HA20QM399	PM09QM399		HA20QM299	PM09QM299		HA20QM199	PM09QM199	
Sample Date	12/29/1999		RPD	9/21/1999		RPD	6/30/1999		RPD	3/10/1999		RPD
Duplicate (Yes/No)	Yes	No		Yes	No		Yes	No		Yes	No	
1,2,4-Trichlorobenzene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
1,3-Dichlorobenzene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
1,4-Dichlorobenzene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2,4,5-Trichlorophenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2,4,6-Trichlorophenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2,4-Dichlorophenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<50	<50	N/A
2,4-Dimethylphenol	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A
2,4-Dinitrophenol	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A
2,4-Dinitrotoluene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<50	<50	N/A
2,6-Dinitrotoluene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2-Chloronaphthalene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2-Chlorophenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2-Methyl-4,6-dinitrophenol	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A
2-Methylnaphthalene	<5	<5	N/A	7	8	13%	7	<5	21%	<5	<5	N/A
2-Methylphenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
2-Nitroaniline	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A
2-Nitrophenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
3,3-Dichlorobenzidine	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A
3,4-Methylphenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
3-Nitroaniline	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A
4-Bromophenyl phenyl ether	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
4-Chloro-3-methylphenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
4-Chloroaniline	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
4-Chlorophenyl phenyl ether	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
4-Nitroaniline	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A	<20	<20	N/A
4-Nitrophenol	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A
Acenaphthene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Acenaphthylene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Aniline	<5	<5	N/A	<6	<6	N/A	<6	<6	N/A	<5	<5	N/A
Anthracene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzo(a)anthracene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzo(a)pyrene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzo(b)fluoranthene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzo(g,h,i)perylene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzo(k)fluoranthene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Benzoic acid	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A	<50	<50	N/A
Benzyl alcohol	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A
Bis(2-chloroethoxy) methar	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
bis(2-Chloroethyl) ether	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Bis(2-chloroisopropyl) Ether	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
bis(2-Ethylhexyl) phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Butyl benzyl phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Chrysene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Di-n-butyl phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Di-n-octyl phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Dibenzo(a,h)anthracene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Dibenzofuran	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Diethyl phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Dimethyl phthalate	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Fluoranthene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Fluorene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Hexachlorobenzene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Hexachlorobutadiene	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A
Hexachlorocyclopentadiene	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A
Hexachloroethane	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A	<10	<10	N/A
Indeno(1,2,3-c,d)pyrene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Isophorone	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
N-Nitroso-di-n-propylamine	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
N-Nitrosodimethylamine	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
N-Nitrosodiphenylamine	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Naphthalene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Nitrobenzene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Pentachlorophenol	<30	<30	N/A	<30	<30	N/A	<30	<30	N/A	<30	<30	N/A
Phenanthrene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Phenol	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Pyrene	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A	<5	<5	N/A
Min of Abs. RPD			0%			13%			0%			0%
Max of Abs. RPD			0%			13%			0%			0%

Notes:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs. Absolute value
RPD Relative percent difference calculated as: Absolute Value of (Primary Result-Duplicate Result)/(Mean of the both results)
In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent mixed detection/non-detection or detection below four times detection limit pairs and are included for comparison purposes only

FIGURES



Scale 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 .5 0 1 Kilometer

Source: TOPO!, Wildflower Productions, 1999

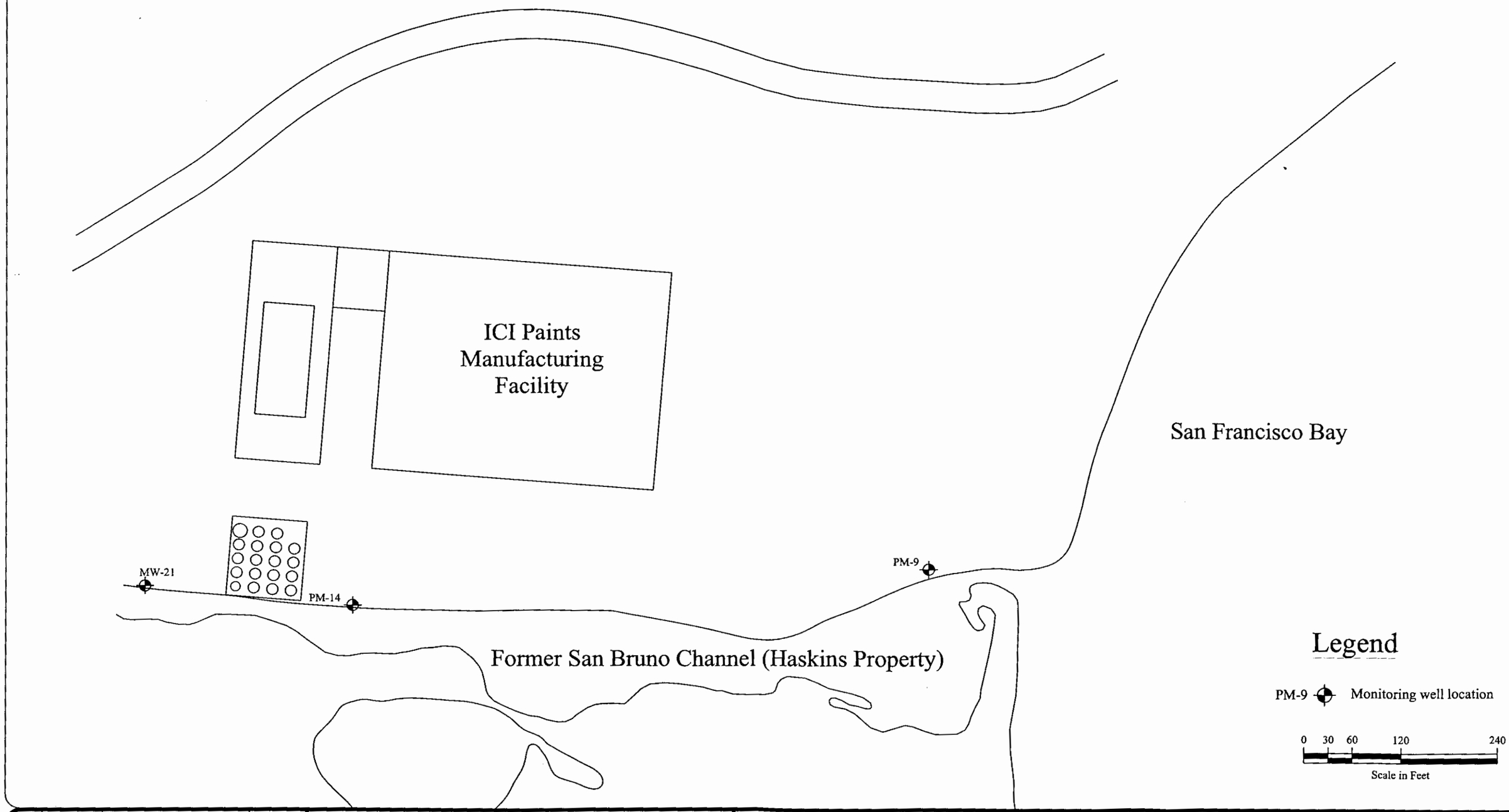
No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 • Dublin, California 94568

Date:	02/23/00
Designed:	OS
Drawn:	OS
Checked:	MH
DWG file:	7037-99

SITE VICINITY MAP
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Figure 1
Project 233.C.01



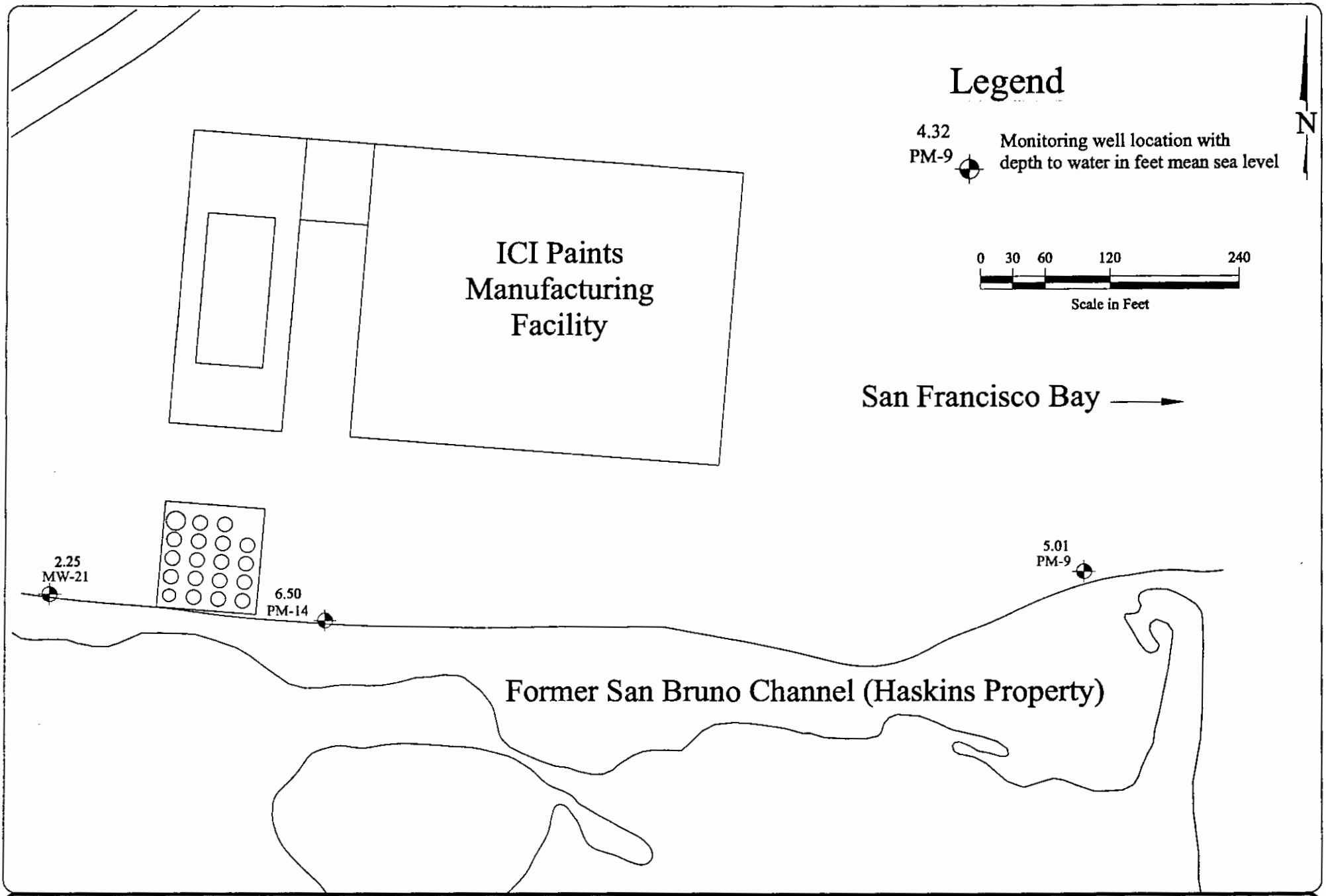
No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 • Dublin, California 94568

Date:	02/23/00
Designed:	OS
Drawn:	OS
Checked:	CI
DWG file:	7723-00

SITE PLAN
The Cherokee Environmental Risk Management Property
450 East Grant Avenue
South San Francisco, California

Figure
2
Project
233.C.01



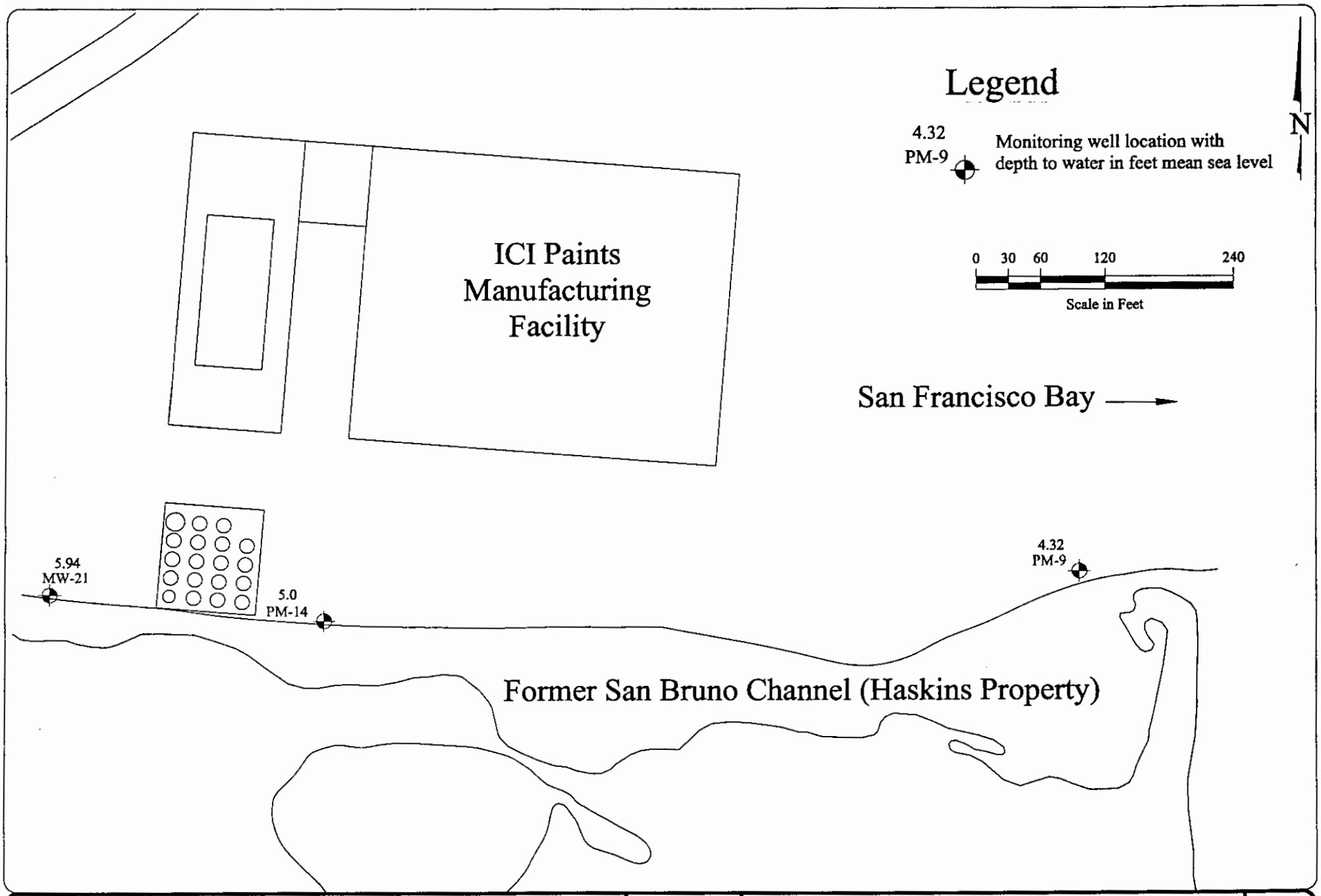
No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 • Dublin, California 94568

Date:	02/24/00
Designed:	OS
Drawn:	OS
Checked:	CI
DWG file:	7659-00

FIRST QUARTER 1999 WATER LEVEL MAP
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Figure
3
Project
233.C.01



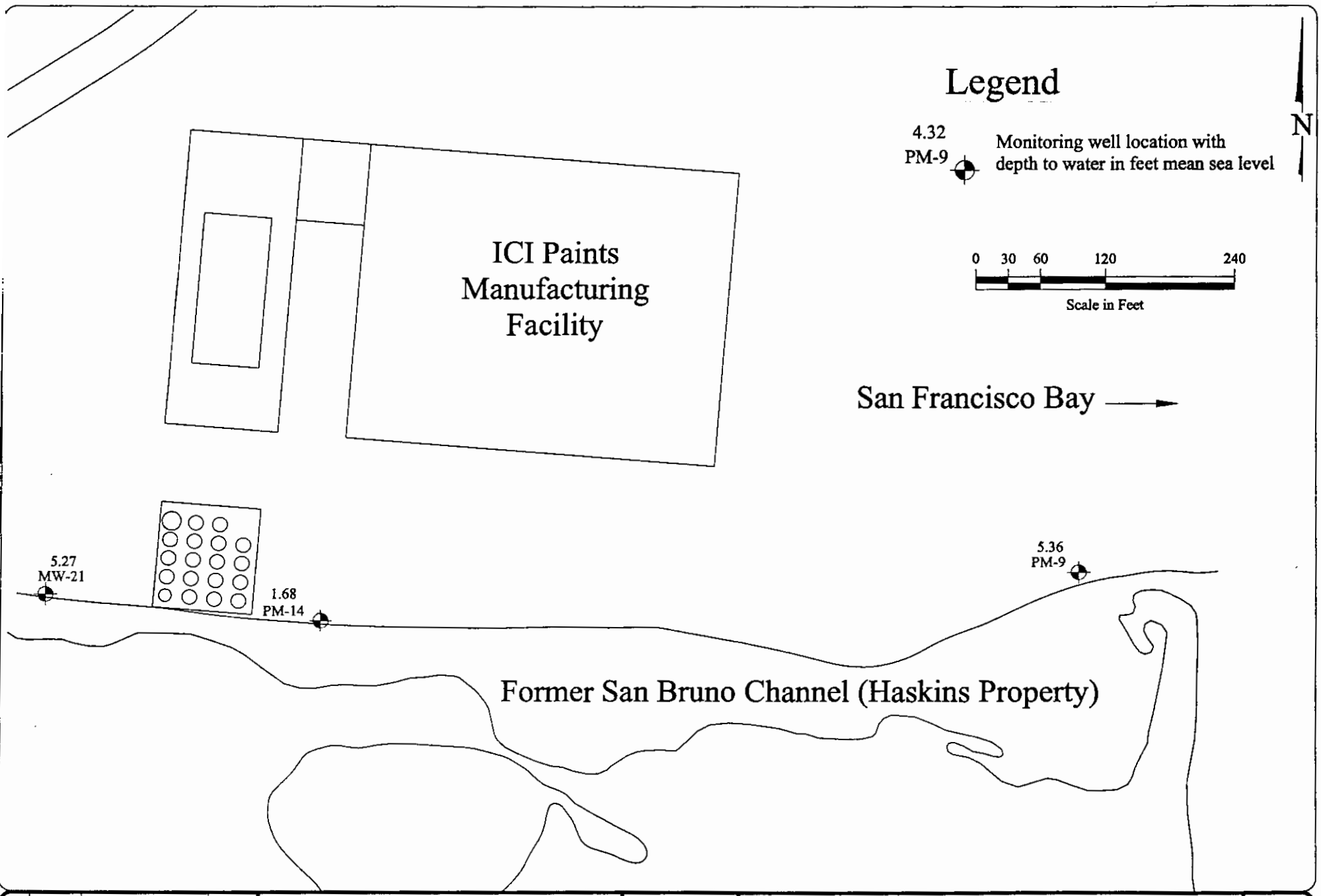
No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 · Dublin, California 94568

Date:	02/24/00
Designed:	OS
Drawn:	OS
Checked:	CI
DWG file:	7659-00

SECOND QUARTER 1999 WATER LEVEL MAP
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Figure
4
Project
233.C.01



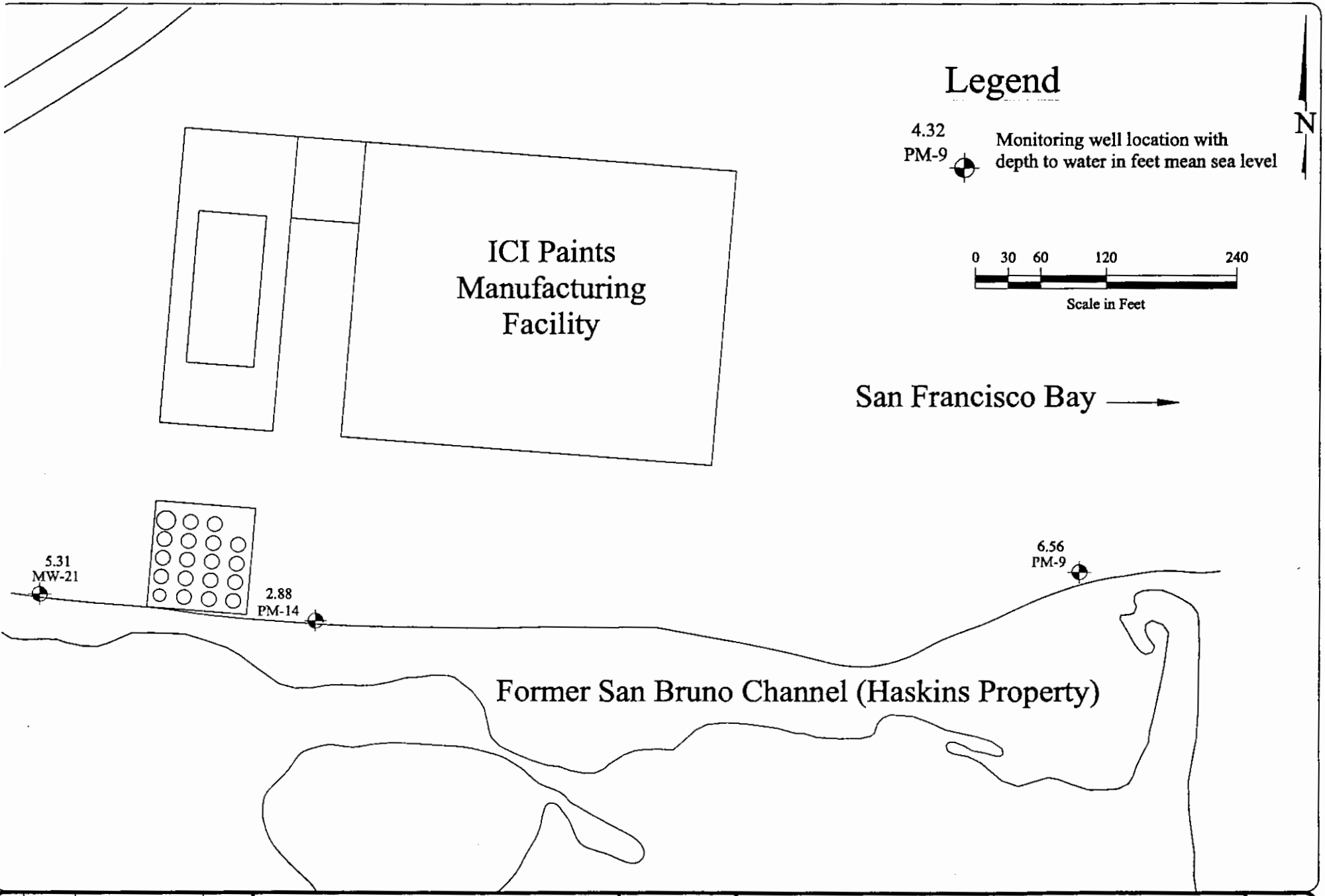
No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 • Dublin, California 94568

Date:	02/24/00
Designed:	OS
Drawn:	OS
Checked:	CI
DWG file:	7659-00

THIRD QUARTER 1999 WATER LEVEL MAP
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Figure
5
Project
233.C.01



No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 · Dublin, California 94568

Date:	02/24/00
Designed:	OS
Drawn:	OS
Checked:	CI
DWG file:	7659-09

FOURTH QUARTER 1999 WATER LEVEL MAP
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Figure
6
Project
233.C.01

Appendix A

Laboratory Analytical Reports

(Note: LARs for QM1 and QM2-1999 provided previously)

Columbia Analytical Services INC.
An Employee-Owned Company

October 7, 1999 Service Request No.: S9902906

Mr. Mike Harrison
HENSHAW ASSOCIATES, INC.
11875 Dublin Blvd. Ste. A200
Dublin, CA 94568

RE: Cherokee/233.D.01

Dear Mr. Harrison:

Enclosed are the results of the sample(s) submitted to our laboratory on September 21, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 51, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1496, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Bernadette Troncales
Project Chemist

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS) and Duplicate Matrix Spike (DMS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/29/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/29/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/29/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/29/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/29/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/29/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/29/99	6	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/29/99	4.9	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	1.2	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/29/99	6.8	
Styrene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	0.8	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/28/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/28/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/28/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/28/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/28/99	6	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/28/99	6.6	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	1.2	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/28/99	8.7	
Styrene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	2	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	1.0	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/28/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/28/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/28/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/28/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/28/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Trip Blank	Units:	ug/L (ppb)
Lab Code:	S9902906-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/29/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/29/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/29/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Trip Blank	Units:	ug/L (ppb)
Lab Code:	S9902906-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

IS2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990928-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/28/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/28/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/28/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/28/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/28/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/28/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990928-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/28/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/28/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/28/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/28/99	ND	

Approved By: _____ Date: 10/07/99

IS2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990929-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	9/29/99	ND	
Acetone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	9/29/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	9/29/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	9/29/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990929-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	9/29/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	9/29/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	9/29/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

IS2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: S9902906
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Volatile Organic Compounds

Prep Method: EPA 5030A
Analysis Method: 8260

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery		
			Dibromofluoromethane	Toluene-D8	4-Bromofluorobenzene
PM14QM399	S9902906-001		88	95	93
PM09QM399	S9902906-004		88	94	101
HA20QM399	S9902906-005		87	94	99
MW21QM399	S9902906-006		88	94	95
Trip Blank	S9902906-007		88	95	92
Lab Control Sample	S990928-LCS		88	94	94
Lab Control Sample	S990928-DLCS		89	94	92
Method Blank (MSD1)	S990928-WB2		88	94	92
Method Blank (MSD1)	S990929-WB1		88	95	93

EPA Acceptance Limits:	86-118	88-110	86-115

Approved By: _____ Date: 10/07/99

SUR3/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	9/29/99

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	S990928-DLCS, S990928-DLCS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
1,1-Dichloroethene	EPA 5030A	8260	10	10	7.2	7.0	72	70	62-145	3	
Benzene	EPA 5030A	8260	10	10	8.6	8.6	86	86	77-127	<1	
Trichloroethene	EPA 5030A	8260	10	10	7.4	7.4	74	74	71-119	<1	
Toluene	EPA 5030A	8260	10	10	8.3	8.2	83	82	76-124	1	
Chlorobenzene	EPA 5030A	8260	10	10	8.5	8.4	85	84	75-127	1	
1,2-Dichlorobenzene	EPA 5030A	8260	10	10	7.9	8.3	79	83	74-126	5	
Naphthalene	EPA 5030A	8260	10	10	6.3	7.1	63	71	43-157	12	

Approved By: _____ Date: 10/07/99

DLCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Aniline	EPA 3510C	8270C	6	1	9/22/99	9/23/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Phenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Isophorone	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluorene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	9/22/99	9/23/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Chrysene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Aniline	EPA 3510C	8270C	6	1	9/22/99	9/23/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Phenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Isophorone	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	8	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluorene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	9/22/99	9/23/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Chrysene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Aniline	EPA 3510C	8270C	6	1	9/22/99	9/23/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Phenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Isophorone	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	7	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluorene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: S9902906
Date Collected: 9/21/99
Date Received: 9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: HA20QM399
Lab Code: S9902906-005
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	9/22/99	9/23/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Chrysene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Aniline	EPA 3510C	8270C	6	1	9/22/99	9/23/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Phenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Isophorone	EPA 3510C	8270C	5	1	9/22/99	9/23/99	7	
2-Nitrophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluorene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM399	Units:	ug/L (ppb)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	9/22/99	9/23/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Chrysene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990922-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Aniline	EPA 3510C	8270C	6	1	9/22/99	9/23/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Phenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Isophorone	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	9/22/99	9/23/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	9/22/99	9/23/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluorene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990922-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	9/22/99	9/23/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	9/22/99	9/23/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Chrysene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	9/22/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: S9902906
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds

Prep Method: EPA 3510C
Analysis Method: 8270C

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 2FPHL	PHL	NBZ	2FBPH	246TBPHL	TPH
PM14QM399	S9902906-001		23	13	63	61	70	80
PM09QM399	S9902906-004		28	15	81	77	80	92
HA20QM399	S9902906-005		25	14	80	76	78	89
MW21QM399	S9902906-006		20	11	53	57	60	68
Lab Control Sample	S009922-LCS		25	15	64	70	73	86
Lab Control Sample	S990922-DLCS		36	21	93	104	113	135
Method Blank	S990922-WB1		26	15	64	67	65	83
CAS Acceptance Limits:			21-100	10-94	35-114	43-116	10-123	33-141

2FPHL	2-Fluorophenol
PHL	Phenol-D6
NBZ	Nitrobenzene-D5
2FBPH	2-Fluorobiphenyl
246TBPHL	2,4,6-Tribromophenol
TPH	Terphenyl-D14

Approved By: _____ Date: 10/07/99

SUR6/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	9/22/99
		Date Analyzed:	9/23/99

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	S990922-DLCS, S990922-DLCS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Phenol	EPA 3510C	8270C	100	100	17	24	17	24	5-112	34	
2-Chlorophenol	EPA 3510C	8270C	100	100	61	88	61	88	23-134	36	
1,4-Dichlorobenzene	EPA 3510C	8270C	50	50	35	48	70	96	20-124	31	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	50	50	34	50	68	100	D-230	38	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	50	50	35	49	70	98	44-142	33	
4-Chloro-3-methylphenol	EPA 3510C	8270C	100	100	60	91	60	91	22-147	41	
Acenaphthene	EPA 3510C	8270C	50	50	34	52	68	104	47-145	42	
4-Nitrophenol	EPA 3510C	8270C	100	100	11	19	11	19	D-132	53	
2,4-Dinitrotoluene	EPA 3510C	8270C	50	50	32	51	64	102	39-139	46	
Pentachlorophenol	EPA 3510C	8270C	100	100	64	100	64	100	14-176	44	
Pyrene	EPA 3510C	8270C	50	50	39	60	78	120	52-115	42	

Approved By: _____ Date: 10/07/99

DLCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	PM14QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	ND	
Arsenic	NONE	7060	0.005	10	NA	9/24/99	<0.05	M2
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	10	NA	9/27/99	<0.05	M2
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	10	NA	9/24/99	<0.05	M2
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	10	NA	9/28/99	<0.05	M2
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

M2 The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	HA30QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	ND	
Arsenic	NONE	7060	0.005	1	NA	9/24/99	ND	
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	1	NA	9/27/99	ND	
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	1	NA	9/24/99	ND	
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	1	NA	9/28/99	ND	
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	HA40QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	ND	
Arsenic	NONE	7060	0.005	1	NA	9/24/99	ND	
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	1	NA	9/27/99	ND	
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	1	NA	9/24/99	ND	
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	1	NA	9/28/99	ND	
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	PM09QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	ND	
Arsenic	NONE	7060	0.005	10	NA	9/24/99	<0.05	M2
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	10	NA	9/27/99	<0.05	M2
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	10	NA	9/24/99	<0.05	M2
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	10	NA	9/28/99	<0.05	M2
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	HA20QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	ND	
Arsenic	NONE	7060	0.005	10	NA	9/24/99	<0.05	M2
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	10	NA	9/27/99	<0.05	M2
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	10	NA	9/24/99	<0.05	M2
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	10	NA	9/28/99	<0.05	M2
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Dissolved Priority Pollutant Metals

Sample Name:	MW21QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	9/29/99	0.07	
Arsenic	NONE	7060	0.005	10	NA	9/24/99	<0.05	M2
Beryllium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Cadmium	NONE	6010A	0.005	1	NA	9/29/99	ND	
Chromium	NONE	6010A	0.01	1	NA	9/29/99	ND	
Copper	NONE	6010A	0.01	1	NA	9/29/99	ND	
Lead	NONE	7421	0.005	10	NA	9/27/99	<0.05	M2
Nickel	NONE	6010A	0.02	1	NA	9/29/99	ND	
Selenium	NONE	7740	0.005	10	NA	9/24/99	<0.05	M2
Silver	NONE	6010A	0.02	1	NA	9/29/99	ND	
Thallium	NONE	7841	0.005	10	NA	9/28/99	<0.05	M2
Zinc	NONE	6010A	0.02	1	NA	9/29/99	ND	

The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Dissolved Priority Pollutant Metals

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	S990929-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	NA	NA	ND	
Arsenic	NONE	7060	0.005	1	NA	NA	ND	
Beryllium	NONE	6010A	0.005	1	NA	NA	ND	
Cadmium	NONE	6010A	0.005	1	NA	NA	ND	
Chromium	NONE	6010A	0.01	1	NA	NA	ND	
Copper	NONE	6010A	0.01	1	NA	NA	ND	
Lead	NONE	7421	0.005	1	NA	NA	ND	
Nickel	NONE	6010A	0.02	1	NA	NA	ND	
Selenium	NONE	7740	0.005	1	NA	NA	ND	
Silver	NONE	6010A	0.02	1	NA	NA	ND	
Thallium	NONE	7841	0.005	1	NA	NA	ND	
Zinc	NONE	6010A	0.02	1	NA	NA	ND	

Approved By: _____ Date: 10/07/99

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Prepared:	NA
		Date Analyzed:	9/29/99

Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Metals

Sample Name:	HA30QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-002MS, S9902906-002DMS	Basis:	NA
Test Notes:			

Analyte	Units	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Antimony	mg/L (ppm)	6010A	0.05	0.50	0.50	ND	0.46	0.47	92	94	75-125	2	
Arsenic	mg/L (ppm)	7060	0.005	0.040	0.040	ND	0.040	0.040	100	100	75-125	<1	
Beryllium	mg/L (ppm)	6010A	0.005	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Cadmium	mg/L (ppm)	6010A	0.005	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Chromium	mg/L (ppm)	6010A	0.01	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	
Copper	mg/L (ppm)	6010A	0.01	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	
Lead	mg/L (ppm)	7421	0.005	0.040	0.040	ND	0.044	0.045	110	113	75-125	2	
Nickel	mg/L (ppm)	6010A	0.02	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	
Selenium	mg/L (ppm)	7740	0.005	0.040	0.040	ND	0.034	0.036	85	90	75-125	6	
Silver	mg/L (ppm)	6010A	0.02	0.10	0.10	ND	0.06	0.06	60	60	75-125	<1	A
Thallium	mg/L (ppm)	7841	0.005	0.040	0.040	ND	0.042	0.040	105	100	75-125	5	
Zinc	mg/L (ppm)	6010A	0.02	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	

A Outside of acceptance limits. Because digested LCS results were acceptable, no further corrective action was taken.

Approved By: _____ Date: 10/07/99

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	PM14QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	0.06	
Arsenic	EPA 3005	7060	0.005	10	9/23/99	9/24/99	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	0.01	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	10	9/23/99	9/27/99	<0.05	M2
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.04	
Selenium	EPA 3005	7740	0.005	10	9/23/99	9/24/99	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	10	9/23/99	9/28/99	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.09	

M2 The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	HA30QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	ND	
Arsenic	EPA 3005	7060	0.005	1	9/23/99	9/24/99	ND	
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	1	9/23/99	9/27/99	ND	
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Selenium	EPA 3005	7740	0.005	1	9/23/99	9/24/99	ND	
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	1	9/23/99	9/28/99	ND	
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	HA40QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	ND	
Arsenic	EPA 3005	7060	0.005	1	9/23/99	9/24/99	ND	
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	1	9/23/99	9/27/99	ND	
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Selenium	EPA 3005	7740	0.005	1	9/23/99	9/24/99	ND	
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	1	9/23/99	9/28/99	ND	
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	PM09QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	ND	
Arsenic	EPA 3005	7060	0.005	10	9/23/99	9/24/99	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	0.04	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	0.03	
Lead	EPA 3005	7421	0.005	10	9/23/99	9/27/99	0.85	
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.04	
Selenium	EPA 3005	7740	0.005	10	9/23/99	9/24/99	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	10	9/23/99	9/28/99	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.29	

M2 The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	HA20QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	ND	
Arsenic	EPA 3005	7060	0.005	10	9/23/99	9/24/99	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	0.03	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	10	9/23/99	9/27/99	0.64	
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.03	
Selenium	EPA 3005	7740	0.005	10	9/23/99	9/24/99	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	10	9/23/99	9/28/99	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	0.20	

M2 The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Total Priority Pollutant Metals

Sample Name:	MW21QM399	Units:	mg/L (ppm)
Lab Code:	S9902906-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	0.09	
Arsenic	EPA 3005	7060	0.005	10	9/23/99	9/24/99	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	10	9/23/99	9/27/99	<0.05	M2
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Selenium	EPA 3005	7740	0.005	10	9/23/99	9/24/99	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	10	9/23/99	9/28/99	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	

M2 The reporting limits were elevated due to matrix interferences.

Approved By: _____ Date: 10/07/99

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Total Priority Pollutant Metals

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	S990921-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	9/21/99	9/23/99	ND	
Arsenic	EPA 3005	7060	0.005	1	9/23/99	9/24/99	ND	
Beryllium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	9/21/99	9/23/99	ND	
Chromium	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Copper	EPA 3005	6010A	0.01	1	9/21/99	9/23/99	ND	
Lead	EPA 3005	7421	0.005	1	9/23/99	9/27/99	ND	
Nickel	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Selenium	EPA 3005	7740	0.005	1	9/23/99	9/24/99	ND	
Silver	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	
Thallium	EPA 3005	7841	0.005	1	9/23/99	9/28/99	ND	
Zinc	EPA 3005	6010A	0.02	1	9/21/99	9/23/99	ND	

Approved By: _____ Date: 10/07/99

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9902906
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Prepared:	9/21/99
		Date Analyzed:	9/23/99

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals

Sample Name:	BATCH QC	Units:	mg/L (ppm)
Lab Code:	S9902897-001MS, S9902897-001DMS	Basis:	NA
Test Notes:			

				Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent	
Analyte	**Units**	**Analysis Method**	**MRL**	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**	**Result Notes**
Antimony	mg/L (ppm)	6010A	0.05	0.50	0.50	ND	0.47	0.45	94	90	75-125	4	
Arsenic	mg/L (ppm)	7060	0.005	0.040	0.040	ND	0.042	0.042	105	105	75-125	<1	X1
Beryllium	mg/L (ppm)	6010A	0.005	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Cadmium	mg/L (ppm)	6010A	0.005	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Chromium	mg/L (ppm)	6010A	0.01	0.10	0.10	ND	0.11	0.09	110	90	75-125	20	
Copper	mg/L (ppm)	6010A	0.01	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Lead	mg/L (ppm)	7421	0.005	0.040	0.040	ND	0.044	0.044	110	110	75-125	<1	X1
Nickel	mg/L (ppm)	6010A	0.02	0.10	0.10	0.03	0.12	0.11	90	80	75-125	9	
Selenium	mg/L (ppm)	7740	0.005	0.040	0.040	ND	0.039	0.039	98	98	75-125	<1	X1
Silver	mg/L (ppm)	6010A	0.02	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Thallium	mg/L (ppm)	7841	0.005	0.040	0.040	ND	0.043	0.044	108	110	75-125	2	X1
Zinc	mg/L (ppm)	6010A	0.02	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	

X1 QC analysis was performed on S9902906-02.

Approved By: _____ Date: 10/07/99

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	L9904130
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Mercury, Dissolved

Prep Method:	METHOD	Units:	mg/L (ppm)
Analysis Method:	7470A	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes
PM14QM399	L9904130-001	0.0005	1	10/4/99	10/4/99	ND	
HA30QM399	L9904130-002	0.0005	1	10/4/99	10/4/99	ND	
HA40QM399	L9904130-003	0.0005	1	10/4/99	10/4/99	ND	
PM09QM399	L9904130-004	0.0005	1	10/4/99	10/4/99	ND	
HA20QM399	L9904130-005	0.0005	1	10/4/99	10/4/99	ND	
MW21QM399	L9904130-006	0.0005	1	10/4/99	10/4/99	ND	
Method Blank	L991004-MB	0.0005	1	10/4/99	10/4/99	ND	

Approved By: _____ Date: 10/07/99

1A/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: L9904130
Date Collected: NA
Date Received: NA
Date Digested: 10/4/99
Date Analyzed: 10/4/99

Matrix Spike/Duplicate Matrix Spike Summary
Mercury, Dissolved

Sample Name: PM14QM399
Lab Code: L9904130-001MS, L9904130-001DMS
Test Notes:

Units: mg/L (ppm)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Mercury, Dissolved	METHOD	7470A	0.0005	0.00500	0.00500	ND	0.00464	0.00478	93	96	75-125	3	

Approved By: _____ Date: 10/07/99

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	L9904130
Project:	Cherokee/233.D.01	**Date Collected:**	9/21/99
Sample Matrix:	Water	**Date Received:**	9/21/99

Mercury, Total

Prep Method:	METHOD	Units:	mg/L (ppm)
Analysis Method:	7470A	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes
PM14QM399	L9904130-001	0.0005	1	10/1/99	10/1/99	ND	
HA30QM399	L9904130-002	0.0005	1	10/1/99	10/1/99	ND	
HA40QM399	L9904130-003	0.0005	1	10/1/99	10/1/99	ND	
PM09QM399	L9904130-004	0.0005	1	10/1/99	10/1/99	ND	
HA20QM399	L9904130-005	0.0005	1	10/1/99	10/1/99	ND	
MW21QM399	L9904130-006	0.0005	1	10/1/99	10/1/99	ND	
Method Blank	L991001-MB	0.0005	1	10/1/99	10/1/99	ND	

Approved By: _____ Date: 10/07/99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: L9904130
Date Collected: NA
Date Received: NA
Date Digested: 10/1/99
Date Analyzed: 10/1/99

Matrix Spike/Duplicate Matrix Spike Summary
Mercury, Total

Sample Name: Batch QC
Lab Code: L9904084-001MS, L9904084-001DMS
Test Notes:

Units: mg/L (ppm)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Mercury, Total	METHOD	7470A	0.00500	0.00500	0.00500	ND	0.00501	0.00509	100	102	75-125	2	

Approved By: _____ Date: 10/07/99

DMS/020597p

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services, Inc.
An Employee-Owned Company
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

SERVICE REQUEST NO. 5990 2906 P.O.# 233.0.01 PAGE 1 OF 1

PROJECT NAME Cherokee #
PROJECT MGR. Mike Harrison
COMPANY Henshaw Associates
ADDRESS 11875 Dublin Blvd. Suite A-200
Dublin CA 94568 PHONE (925) 551-7272
FAX (925) 551-7464
SAMPLER'S SIGNATURE Charles Ice

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HNO_3	NP	H_2SO_4	NaOH						REMARKS *
						Volatile Organics BY GC/MS 624 ☐ 8240 ☐ 8260 ☒	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐	TPH as Diesel ☐ HBHC ☐	Base/Neu/Acid Organics / GC/MS 625 ☐ 8270 ☒	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH - 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐	pH, Cond, Cl, SO_4, F, TDS, NH_3-N, COD, NO_3, NO_2 (circle)	Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle)	Cyanide	PPM Total	PPM Dissolved					
PM14QM399	9-21	12:00PM	1	Aq.		X				X								X	X				
HA30QM399		1:30PM	2															X	X				
HA40QM399		1:40PM	3															X	X				
PM09QM399		1:50PM	4			X				X								X	X				
HA20QM399		2:00PM	5			X				X								X	X				
MW21QM399	↓	3:00PM	6	↓		X				X								X	X				
TRIP BLANK	9-21		7			X																	

RELINQUISHED BY:
Signature: Charles Ice
Printed Name: Charles Ice
Firm: Henshaw Assoc.
Date/Time: Sept. 21, 1999 5:30PM

RECEIVED BY:
Signature: F. BLNS
Printed Name:
Firm: CAS/SC
Date/Time: 9/21/99 1730

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
X 5 day ___ Other
___ Standard (10 working days)
Results Due 9/28/99 29

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MOLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

Shipped Via/Tracking #

SAMPLE RECEIPT: Condition Custody Seals

SPECIAL INSTRUCTIONS/COMMENTS:
Circle which metals are to be analyzed:
Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

R11/D2

Storage: R9/D1

Will sample results be used in connection with drinking water regulations? (Yes) (No) If yes, you must so indicate by writing "DW" for each such sample.

Columbia Analytical Services INC.
An Employee-Owned Company

January 17, 2000

Service Request No.: S9904104

Mr. Mike Harrison
HENSHAW ASSOCIATES, INC.
11875 Dublin Blvd. Ste. A200
Dublin, CA 94568

RE: **Cherokee/233.D.01**

Dear Mr. Harrison:

Enclosed are the results of the sample(s) submitted to our laboratory on December 29, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 40, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 2352, expiration: January 31, 2001).

If you have any questions, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Bernadette Troncales

Bernadette Troncales
Project Chemist

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: HENSHAW ASSOCIATES, INC.
Project: Cherokee/233.D.01

Service Request: S9904104

NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS) and Duplicate Matrix Spike (DMS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	01/05/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	01/05/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	01/05/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	01/05/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
cis-1,2-Dichlorocthene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	01/05/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/8/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	01/05/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	01/05/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	01/05/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	01/05/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	01/05/00	2.4	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	01/05/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	1.0	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	01/05/00	2.6	
Styrene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	0.7	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/10/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	01/05/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	01/05/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	01/05/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	01/05/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	01/05/00	2.4	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	01/05/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	1.1	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	01/05/00	2.8	
Styrene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	0.7	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	01/05/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	01/05/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	01/05/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	01/05/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	01/05/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Trip Blank	Units:	ug/L (ppb)
Lab Code:	S9904104-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	01/05/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	01/05/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	01/05/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	01/05/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	01/05/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Trip Blank	Units:	ug/L (ppb)
Lab Code:	S9904104-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	01/05/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	01/05/00	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	01/05/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	01/05/00	ND	

Approved By: _____ Date: 01/18/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MS01)	Units:	ug/L (ppb)
Lab Code:	S200105-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Acrolein	EPA 5030A	8260	5	1	NA	1/5/00	ND	
Acetone	EPA 5030A	8260	20	1	NA	1/5/00	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	1/5/00	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	1/5/00	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Vinyl Acetate	EPA 5030A	8260	5	1	NA	1/5/00	ND	
2-Butanone (MEK)	EPA 5030A	8260	5	1	NA	1/5/00	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
2-Hexanone	EPA 5030A	8260	5	1	NA	1/5/00	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MS01)	Units:	ug/L (ppb)
Lab Code:	S200105-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	1/5/00	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	1/5/00	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	1/5/00	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	1/5/00	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	1/5/00	ND	

Approved By: _____ Date: 1/18/00

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: S9904104
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Volatile Organic Compounds

Prep Method: EPA 5030A
Analysis Method: 8260

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery		
			Dibromofluoromethane	Toluene-D8	4-Bromofluorobenzene
PM14QM499	S9904104-001		101	96	90
HA20QM499	S9904104-002		99	96	116
PM09QM499	S9904104-003		98	97	116
MW21QM499	S9904104-004		98	97	95
Trip Blank	S9904104-005		99	96	90
PM09QM499	S9904104-003MS		100	97	98
PM09QM499	S9904104-003DMS		100	97	98
Method Blank (MS01)	S200105-WB1		99	95	89
CAS Acceptance Limits:			57-167	62-138	62-140

Approved By: _____ Date: 01/18/02

SUR3/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99
		Date Extracted:	NA
		Date Analyzed:	01/05/00

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	PM09QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-003DMS, S9904104-003DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
1,1-Dichloroethene	EPA 5030A	8260	0.5	50	50	ND	46	46	92	92	62-145	<1	
Benzene	EPA 5030A	8260	0.5	50	50	2.4	51	51	97	97	77-127	<1	
Trichloroethene	EPA 5030A	8260	0.5	50	50	ND	47	47	94	94	71-119	<1	
Toluene	EPA 5030A	8260	0.5	50	50	ND	47	46	94	92	76-124	2	
Chlorobenzene	EPA 5030A	8260	0.5	50	50	1.1	48	49	94	96	75-127	2	

Approved By: _____ Date: 01/18/00

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Aniline	EPA 3510C	8270C	6	1	12/30/99	01/03/00	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Phenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Isophorone	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Naphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Acenaphthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluorene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	12/30/99	01/03/00	ND	
Phenanthrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Chrysene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Aniline	EPA 3510C	8270C	6	1	12/30/99	01/03/00	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Phenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Isophorone	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Naphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Acenaphthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluorene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	12/30/99	01/03/00	ND	
Phenanthrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Chrysene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

Approved By: _____ Date: 01/18/00

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Aniline	EPA 3510C	8270C	6	1	12/30/99	01/03/00	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Phenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Isophorone	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Naphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Acenaphthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluorene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 01/19/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	12/30/99	01/03/00	ND	
Phenanthrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Chrysene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

Approved By: _____ Date: 01/18/00

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Aniline	EPA 3510C	8270C	6	1	12/30/99	01/03/00	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Phenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Isophorone	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Naphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Acenaphthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluorene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM499	Units:	ug/L (ppb)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	12/30/99	01/03/00	ND	
Phenanthrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Chrysene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

Approved By: _____ Date: 01/18/00

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S991230-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Aniline	EPA 3510C	8270C	6	1	12/30/99	01/03/00	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Phenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Isophorone	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Naphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	12/30/99	01/03/00	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Acenaphthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	12/30/99	01/03/00	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluorene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 01/18/00

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S991230-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	12/30/99	01/03/00	ND	
Phenanthrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	12/30/99	01/03/00	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Chrysene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	12/30/99	01/03/00	ND	

Approved By: _____ Date: 01/18/00

IS2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: Cherokee/233.D.01
Sample Matrix: Water

Service Request: S9904104
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds

Prep Method: EPA 3510C
Analysis Method: 8270C

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 2FPHL	PHL	NBZ	2FBPH	246TBPHL	TPH
PM14QM499	S9904104-001		28	19	58	54	93	84
HA20QM499	S9904104-002		29	21	60	72	91	86
PM09QM499	S9904104-003		24	20	64	64	73	75
MW21QM499	S9904104-004		33	22	66	64	97	86
Lab Control Sample	S991230-LCS		45	29	79	73	98	85
Lab Control Sample	S991230-DLCS		41	25	77	70	100	88
Method Blank	S991230-WB1		44	30	82	75	98	85
CAS Acceptance Limits:			21-100	10-94	35-114	43-116	10-123	33-141

2FPHL	2-Fluorophenol
PHL	Phenol-D6
NBZ	Nitrobenzene-D5
2FBPH	2-Fluorobiphenyl
246TBPHL	2,4,6-Tribromophenol
TPH	Terphenyl-D14

Approved By: _____ Date: 01/18/00

SUR6/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	12/30/99
		Date Analyzed:	01/03/00

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Lab Control Sample	Units:	ug/L (ppb)
Lab Code:	S991230-DLCS, S991230-DLCS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Phenol	EPA 3510C	8270C	100	100	31	29	31	29	5-112	7	
2-Chlorophenol	EPA 3510C	8270C	100	100	72	71	72	71	23-134	1	
1,4-Dichlorobenzene	EPA 3510C	8270C	50	50	34	32	68	64	20-124	6	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	50	50	40	40	80	80	D-230	< 1	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	50	50	35	34	70	68	44-142	3	
4-Chloro-3-methylphenol	EPA 3510C	8270C	100	100	84	84	84	84	22-147	< 1	
Acenaphthene	EPA 3510C	8270C	50	50	37	36	74	72	47-145	3	
4-Nitrophenol	EPA 3510C	8270C	100	100	28	26	28	26	D-132	7	
2,4-Dinitrotoluene	EPA 3510C	8270C	50	50	40	42	80	84	39-139	5	
Pentachlorophenol	EPA 3510C	8270C	100	100	76	87	76	87	14-176	13	
Pyrene	EPA 3510C	8270C	50	50	40	43	80	86	52-115	7	

Approved By: _____ Date: 01/18/00

DLCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Dissolved Metals

Sample Name:	PM14QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	NONE	7060	0.005	10	01/05/00	01/07/00	<0.05	M2
Beryllium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	NONE	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/03/00	01/06/00	ND	
Nickel	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	NONE	7740	0.005	10	01/05/00	01/06/00	ND	M2
Silver	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	NONE	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	NONE	6010A	0.02	1	12/30/99	12/30/99	0.38	

M2 The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Dissolved Metals

Sample Name:	HA20QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	NONE	7060	0.005	10	01/05/00	01/07/00	<0.05	M2
Beryllium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	NONE	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/03/00	01/03/00	0.0003	
Nickel	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	NONE	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	NONE	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	NONE	6010A	0.02	1	12/30/99	12/30/99	0.05	

The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Dissolved Metals

Sample Name:	PM09QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	NONE	7060	0.005	10	01/05/00	01/07/00	<0.05	M2
Beryllium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	NONE	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/03/00	01/03/00	0.0002	
Nickel	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	NONE	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	NONE	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	NONE	6010A	0.02	1	12/30/99	12/30/99	0.21	

The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Dissolved Metals

Sample Name:	MW21QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	12/30/99	12/30/99	0.08	
Arsenic	NONE	7060	0.005	10	01/05/00	01/07/00	0.06	
Beryllium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	NONE	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/03/00	01/03/00	ND	
Nickel	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	NONE	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	NONE	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	NONE	6010A	0.02	1	12/30/99	12/30/99	0.03	

The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Dissolved Metals

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	S9904104-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	NONE	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	NONE	7060	0.005	1	01/05/00	01/07/00	ND	
Beryllium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	NONE	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	NONE	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	NONE	7421	0.005	1	01/05/00	01/06/00	ND	
Mercury	METHOD	7470	0.0002	1	01/03/00	01/03/00	ND	
Nickel	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	NONE	7740	0.005	1	01/05/00	01/06/00	ND	
Silver	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	NONE	7841	0.005	1	01/05/00	01/07/00	ND	
Zinc	NONE	6010A	0.02	1	12/30/99	12/30/99	ND	

The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Prepared:	12/30/99
		Date Analyzed:	12/30/99

Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Metals

Sample Name:	BATCH QC	Units:	mg/L (ppm)
Lab Code:	S9904101-001MS, S9904101-001DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Antimony	NONE	6010A	0.05	0.50	0.50	ND	0.50	0.49	100	98	75-125	2	
Arsenic	NONE	7060	0.005	0.040	0.040	ND	0.038	0.038	95	95	75-125	<1	X1
Beryllium	NONE	6010A	0.005	0.10	0.10	ND	0.10	0.09	100	90	75-125	11	
Cadmium	NONE	6010A	0.005	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Chromium	NONE	6010A	0.01	0.10	0.10	ND	0.10	0.09	100	90	75-125	11	
Copper	NONE	6010A	0.01	0.10	0.10	ND	0.09	0.09	90	90	75-125	<1	
Lead	NONE	7421	0.005	0.040	0.040	ND	0.040	0.042	100	105	75-125	5	X1
Mercury	METHOD	7470	0.0002	0.010	0.010	ND	0.010	0.010	100	100	75-125	<1	X2
Nickel	NONE	6010A	0.02	0.10	0.10	ND	0.10	0.10	100	100	75-125	<1	
Selenium	NONE	7740	0.005	0.040	0.040	ND	0.036	0.036	90	90	75-125	<1	X1
Silver	NONE	6010A	0.02	0.10	0.10	ND	0.10	0.09	100	90	75-125	11	
Thallium	NONE	7841	0.005	0.040	0.040	ND	0.030	0.031	75	78	75-125	<1	X1
Zinc	NONE	6010A	0.02	0.10	0.10	0.04	0.13	0.12	90	80	75-125	8	

X1	QC analysis was done on S9903924-16.
X2	QC analysis was done on S9903965-17.

Approved By: _____ Date: 01/18/00

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Total Metals

Sample Name:	PM14QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	12/30/99	12/30/99	<0.1	M2
Arsenic	EPA 3005	7060	0.005	1	01/05/00	01/07/00	ND	
Beryllium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	<0.01	M2
Chromium	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	0.05	
Copper	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	EPA 3005	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/03/00	01/03/00	0.0008	
Nickel	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	0.08	
Selenium	EPA 3005	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	EPA 3005	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	0.06	

M2 The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Total Metals

Sample Name:	HA20QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	EPA 3005	7060	0.005	10	01/05/00	01/07/00	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	EPA 3005	7421	0.005	10	01/05/00	01/06/00	0.14	
Mercury	METHOD	7470	0.0002	1	01/05/00	01/06/00	0.0007	
Nickel	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	EPA 3005	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	EPA 3005	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	0.04	

M2 The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Total Metals

Sample Name:	PM09QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	EPA 3005	7060	0.005	10	01/05/00	01/07/00	<0.05	M2
Beryllium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	0.02	
Copper	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	EPA 3005	7421	0.005	10	01/05/00	01/06/00	0.40	
Mercury	METHOD	7470	0.0002	1	01/05/00	01/06/00	0.0002	
Nickel	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	EPA 3005	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	EPA 3005	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	0.35	

M2 The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

IS22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	12/29/99
Sample Matrix:	Water	**Date Received:**	12/29/99

Total Metals

Sample Name:	MW21QM499	Units:	mg/L (ppm)
Lab Code:	S9904104-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	12/30/99	12/30/99	0.08	
Arsenic	EPA 3005	7060	0.005	10	01/05/00	01/07/00	0.072	
Beryllium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	EPA 3005	7421	0.005	10	01/05/00	01/06/00	<0.05	M2
Mercury	METHOD	7470	0.0002	1	01/05/00	01/06/00	ND	
Nickel	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	EPA 3005	7740	0.005	10	01/05/00	01/06/00	<0.05	M2
Silver	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	EPA 3005	7841	0.005	10	01/05/00	01/07/00	<0.05	M2
Zinc	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	0.03	

M2 The MRL was elevated due to matrix interferences.

Approved By: _____ Date: 01/18/00

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9904104
Project:	Cherokee/233.D.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Total Metals

Sample Name:	Method Blank	Units:	mg/L (ppm)
Lab Code:	S9904104-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
Antimony	EPA 3005	6010A	0.05	1	12/30/99	12/30/99	ND	
Arsenic	EPA 3005	7060	0.005	1	01/05/00	01/07/00	ND	
Beryllium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Cadmium	EPA 3005	6010A	0.005	1	12/30/99	12/30/99	ND	
Chromium	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Copper	EPA 3005	6010A	0.01	1	12/30/99	12/30/99	ND	
Lead	EPA 3005	7421	0.005	1	01/05/00	01/06/00	ND	
Mercury	METHOD	7470	0.0002	1	01/05/00	01/06/00	ND	
Nickel	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Selenium	EPA 3005	7740	0.005	1	01/05/00	01/06/00	ND	
Silver	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	
Thallium	EPA 3005	7841	0.005	1	01/05/00	01/07/00	ND	
Zinc	EPA 3005	6010A	0.02	1	12/30/99	12/30/99	ND	

Approved By: _____ Date: 01/18/00

1S22/020597p

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services, Inc.
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

SERVICE REQUEST NO. S9904104 P.O.# 233.D.01 PAGE 1 OF 1

PROJECT NAME Cherokee #
PROJECT MGR. Mike Harrison
COMPANY Henshaw Associates
ADDRESS 11875 Dublin Blvd. Suite A-200
Dublin CA 94568 PHONE (925) 551-7272
FAX (925) 551-7464
SAMPLER'S SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HNO_3	NP	H_2SO_4	NaOH							REMARKS
						Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐	TPH as Diesel ☐ HBHC ☐	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH - 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle)	Cyanide	PPM Total	PPM Dissolved						
PM14QM499	12-29	11:00AM	(1)	Aq.		X				X								X	X					
HA20QM499		2:00PM	(2)			X				X								X	X					
PM09QM999		1:30PM	(3)			X				X								X	X					
MW21QM499		1:00PM	(4)	↓		X				X								X	X					
Trip Blank	↓		(5)	Aq.	1	X																		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Charles Ice	Signature: Joseph Machado	Signature	Signature
Printed Name: Charles Ice	Printed Name: JOSEPH MACHADO CAS	Printed Name	Printed Name
Firm: Henshaw Assoc.	Firm	Firm	Firm
Date/Time: 12-29 3:00PM	Date/Time: 12/29/99 3:00PM	Date/Time	Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
✓ 5 day ___ Other
___ Standard (10 working days)
Results Due 1/6/00

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

Shipped Via/Tracking #

SAMPLE RECEIPT: Condition Custody Seals

SPECIAL INSTRUCTIONS/COMMENTS:
Circle which metals are to be analyzed:
Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg PPM

R11|D2

Storage: R8|D2

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☒ No If yes, you must so indicate by writing "DW" for each such sample.

Henshaw Associates, Inc.

Environmental Engineering Services

Dublin, California (Headquarters)

11875 Dublin Blvd.
Suite A-200
Dublin, CA 94568

Phone: (925) 551-7272
Fax: (925) 551-7464

Portland, Oregon

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Southern Property Boundary Groundwater Sampling QM2-1999

450 East Grand Avenue
South San Francisco, California

September 10, 1999

Prepared for:
Cherokee Environmental Risk Management Property

Prepared by:

Henshaw Associates, Inc.
Environmental Engineering Services

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Environmental Engineering Services

September 10, 1999

Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Southern Property Boundary Groundwater Sampling, QM2-1999
The Cherokee Environmental Risk Management Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency Region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for the former O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), second quarter 1999 (QM2-99) groundwater monitoring has been completed by Henshaw Associates, Inc. (Henshaw). Groundwater monitoring was completed by Henshaw on behalf of Cherokee Environmental Risk Management (Cherokee), the current owner of the Property. The monitoring is designed to evaluate groundwater along the southern boundary of the Property by sampling existing monitoring wells. Sample locations are presented on Figure 1.

In keeping with our conversation of May 26, 1998, and previous submittals, the results of QM2-99 monitoring have been incorporated in this letter.

SITE SETTING

The Property is located at 450 East Grand Avenue in South San Francisco, California, and includes the land occupied by the ICI Paint manufacturing facility. The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The property is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

GEOLOGY

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay

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deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as Bay Mud. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

HYDROGEOLOGY

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of the monitoring wells sampled during QM2-99 was 25 feet BGS.

FIELD ACTIVITIES

Sampling of the Southern Boundary groundwater was conducted on June 30, 1999. Three monitoring wells were sampled including MW-21, PM-09, and PM-14. Water levels were taken from the three wells prior to initiation of well purging. Table 1 presents well construction details and depth to water measurements. Monitoring wells were purged with dedicated tubing and a peristaltic pump, and sampled with dedicated bailers. Samples were collected from PM-09 and PM-14 when the monitoring wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes. MW-21, which was purged dry, was sampled after three hours were allowed to elapse. Samples were analyzed in accordance with the Workplan for priority pollutant metals (PPMs) by EPA 6000/7000, VOCs by EPA 8240, and SVOCs by EPA 8270. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 5-micron filters and field preserved for dissolved analysis. Field parameters were recorded and are presented in Table 2.

ANALYTICAL RESULTS

In the following discussion, metals results are presented in mg/L or parts per million while volatile organic compounds are presented in µg/L or parts per billion. Samples field preserved but not field filtered are discussed as "total" metals samples while field filtered, preserved samples are termed "dissolved".

Metals

Complete metals analytical results are presented in Table 3. Antimony was detected in total and dissolved metals samples from MW-21 at 0.0216 mg/L and 0.0183 mg/L, respectively, and at very low levels in samples collected from PM-09 and PM-14. Arsenic was also detected in total and dissolved metals samples collected from MW-21 at 0.036 mg/L and 0.023 mg/L, respectively. Arsenic was also detected at very low levels in samples collected from PM-09 and PM-14. Chromium was detected in total metals samples collected from PM-09 and PM-14 at 0.108 mg/L and 0.479 mg/L, respectively. Filtered samples collected from PM-09 and PM-14 contained low or non-detectable levels of chromium. Lead was detected in both total and dissolved metals samples collected from the three wells sampled during the QM2-99 sampling event at levels ranging from 0.00072 mg/L (MW-21, dissolved) to 1.7 mg/L (PM-09, total).

Nickel was detected in all samples collected during QM2-99, with the maximum detection in the sample collected from PM-14 (total) at 0.144 mg/L. Beryllium, cadmium, copper, mercury, silver, thallium, and zinc were detected in several samples collected from the three wells sampled during the QM2-99 sampling event at very low levels (Table 3). Selenium was not detected in any of the total or dissolved metals samples collected during QM2-99.

Volatile Organic Compounds

Volatile organic compounds (Table 4) acetone, benzene, chlorobenzene, ethylbenzene, and total xylenes were detected in samples collected from PM-09 at concentrations ranging from 1 µg/L of chlorobenzene to 140 µg/L of total xylenes.

Semivolatile Organic Compounds

The only semivolatile organic compound detected during the QM2-99 sampling round (Table 5) was 2-Methylnaphthalene, detected in samples collected from PM-09 at a concentration of 7 µg/L.

Quality Control Samples

Relative percent difference (RPD) comparison between primary and duplicate samples collected from PM-09 during QM2-99 activities revealed that RPD project targets (less then 30%) were met for samples that were not field filtered. RPDs for the dissolved duplicate sample pair were above project targets for several constituents including beryllium, copper, lead, and zinc.

Inspection of the laboratory analytical report package reveals that the laboratory analyzed an internal "laboratory" duplicate sample for HA20QM299 (the duplicate sample for PM-09). The RPDs for the laboratory duplicate were very low (less then or equal to 15%). Additionally, the laboratory performed multiple extractions for the filtered samples and results were consistent between extracts.

Based upon the results of RPD analysis of non-filtered sampled and internal laboratory quality control results, the out of target RPDs for filtered samples appear to be attributable to filter problems. To mitigate this problem, Henshaw will purchase filters from a different manufacturer for the next round of groundwater sampling. Additionally, a sample of distilled water will be filtered with the new filters and submitted for metals analysis.

WATER LEVELS

Water levels taken during the second quarter 1999 monitoring event are presented on Table 1 and Figure 1. The monitored wells are linearly arranged on an east-west axis and do not provide information on north-south trends in groundwater flow. Based upon the QM2-99 readings, the groundwater surface has an easterly trend of approximately 0.0017 ft/ft.

SUMMARY

Quarterly monitoring for the second quarter of 1999 was conducted at the Property on June 30, 1999. Low concentrations of metals were detected in water samples collected from MW-21,

PM-09 and PM-14. Elevated concentrations of lead were detected in total samples collected from PM-09. Concentrations of dissolved, and thus mobile, metals detected in samples collected during monitoring activities continue to be at low levels. Concentrations of several VOCs including benzene, ethylbenzene and total xylenes were detected in samples collected from PM-09. Only the semivolatile organic compound 2-methylnaphthalene was detected in samples collected during QM2-99. Analytical results from QM2-99 are consistent with historical values.

Based upon the results of second quarter 1999 monitoring, significant levels of mobile metals have not been observed to be moving within the shallow groundwater beneath the subject property. Low levels of volatile organic compounds can be found in groundwater proximate to monitoring well PM-09.

Please contact me at (925) 551-7272 with any questions.

Respectfully submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Well Construction Details and Water Levels
Table 2	Field Parameters
Table 3	Metals Analytical Summary
Table 4	Volatile Organic Compounds Analytical Summary
Table 5	Semivolatile Organic Compounds Analytical Summary
Table 6	Relative Percent Difference Analyses
Figure 1	Property Information (Well locations with groundwater elevation information)
Appendix A	Laboratory Analytical Reports

cc: Mr. Alan Seeling, Cherokee Environmental Risk Management
Mr. Fasil Tegene, ICI

TABLE 1
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Well ID	Installation Date	Stick Up (ft.)	Total Depth[1] (ft. BMP)	Total Depth[2] (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch.)	Depth to Water 6/30/99 (ft. BMP)	Groundwater Elevation 6/30/99 (ft. MSL)
MW-21	9/2/1987	2.0	24.7	22.7	12.24	13.0	23.0	10.0	25.0	4	6.30	5.94
PM-09	8/28/1987	2.0	14.8	12.8	10.07	8.0	13.0	5.0	13.5	2	5.75	4.32
PM-14	12/10/1993	0.0	9.8	9.8	9.35	7.0	12.0	6.0	10.0	2	4.35	5.00

Note:
BGS Below ground surface
BMP Below measuring point
MSL Mean sea level
[1] Depth measured in the field
[2] Depth from boring logs

TABLE 2
FIELD PARAMETERS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Sample Location	MW-21	PM-09	PM-14
Measurement Date	3/10/1999	3/10/1999	3/10/1999
pH	7.11	7.14	7.17
Conductance (µmhos/cm)	2850	2100	713
Temperature (°F)	74.1	68.9	71.1

Note:
BGS Below ground surface

TABLE 3
METALS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location		MW-21	MW-21	PM-09	PM-09	PM-09	PM-09	PM-14	PM-14
Field Sample ID		MW21QM299	MW21QM2999(F)	HA20QM299	HA20QM299(F)	PM09QM299	PM09QM299(F)	PM14QM299	PM14QM299(F)
Sample Date		6/30/99	6/30/99	6/30/99	6/30/99	6/30/99	6/30/99	6/30/99	6/30/99
Duplicate (Yes/No)		No	No	Yes	Yes	No	No	No	No
Total (T) or Dissolved (D)	MCL	T	D	T	D	T	D	T	D
Antimony	0.006	0.0216	0.0183	0.00107	0.00062	0.00106	0.00077	0.00019	0.00029
Arsenic	0.05	0.036	0.023	0.012	0.003	0.011	0.003	0.005	0.003
Beryllium	0.004	<0.00004	<0.00004	0.00019	0.00002	0.00016	0.00003	0.00027	<0.00002
Cadmium	0.005	0.00047	0.00033	0.00327	0.0002	0.00268	0.00023	0.00032	0.00011
Chromium	0.05	<0.004	<0.004	0.108	<0.004	0.093	<0.004	0.479	0.006
Copper	11	0.00367	0.00292	0.0254	0.00153	0.0212	0.0027	0.0154	0.00219
Lead	0.05	0.0539	0.00072	1.7	0.0347	1.58	0.0596	0.0252	0.00107
Mercury	0.002	<0.0002	<0.0002	0.0006	<0.0002	0.0007	<0.0002	0.0002	<0.0002
Nickel	0.1	0.0141	0.00758	0.065	0.00556	0.0604	0.00626	0.144	0.00974
Selenium	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Silver	0.1	0.00003	0.00003	0.00004	<0.00002	0.00003	0.00472	0.00006	<0.00002
Thallium	0.002	<0.00004	<0.00004	0.00006	<0.00002	0.00006	<0.00002	0.00007	<0.00002
Zinc	5	0.0534	0.0189	0.648	0.0146	0.553	0.0383	0.0297	0.0221

Note:
<# Below detection limit
MCL California Maximum Contaminant Level

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14
Field Sample Name		MW21QM299	PM09QM299	HA20QM299	PM14QM299
Sample Date		6/30/99	6/30/99	6/30/99	6/30/99
Duplicate		No	No	Yes	No
1,1,1-Trichloroethane	200	<0.5	<1	<1	<0.5
1,1,2,2-Tetrachloroethane	1	<0.5	<1	<1	<0.5
1,1-Dichloroethane	5	<0.5	<1	<1	<0.5
1,1-Dichloroethene	6	<0.5	<1	<1	<0.5
1,2-Dichloroethane	0.5	<0.5	<1	<1	<0.5
1,2-Dichloropropane	5	<0.5	<1	<1	<0.5
2-Butanone	NE	<2	<4	<4	<2
2-Hexanone	NE	<2	<4	<4	<2
4-Methyl-2-pentanone	NE	<5	<10	<10	<5
Acetone	NE	<2	5	4	<2
Benzene	1	<0.5	45	49	<0.5
Bromodichloromethane	100(1)	<0.5	<1	<1	<0.5
Bromoform	100(1)	<0.5	<1	<1	<0.5
Bromomethane	100(1)	<0.5	<1	<1	<0.5
Carbon Disulfide	NE	<0.5	<1	<1	<0.5
Carbon Tetrachloride	0.5	<0.5	<1	<1	<0.5
Chlorobenzene	70	<0.5	1	<1	<0.5
Chloroethane	NE	<0.5	<1	<1	<0.5
Chloroform	100(1)	<0.5	<1	<1	<0.5
Chloromethane	NE	<0.5	<1	<1	<0.5
cis-1,2-Dichloroethene	6	<0.5	<1	<1	<0.5
cis-1,3-Dichloropropene	0.5(2)	<0.5	<1	<1	<0.5
Dibromochloromethane	100(1)	<0.5	<1	<1	<0.5
Ethylbenzene	700	<0.5	4	4	<0.5
Methylene Chloride	5	<1	<2	<2	<1
Styrene	100	<0.5	<1	<1	<0.5
Tetrachloroethene	5	<0.5	<1	<1	<0.5
Toluene	150	<0.5	<1	<1	<0.5
trans-1,2-Dichloroethene	10	<0.5	<1	<1	<0.5
trans-1,3-Dichloropropene	NE	<0.5	<1	<1	<0.5
Trichloroethene	5	<0.5	<1	<1	<0.5
Vinyl Acetate	NE	<2	<4	<4	<2
Vinyl Chloride	0.5	<0.5	<1	<1	<0.5
Xylenes, Total	1750	<0.5	130	140	<0.5

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY

450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14
Field Sample Name		MW21QM299	HA20QM299	PM09QM299	PM14QM299
Sample Date		6/30/99	6/30/99	6/30/99	6/30/99
Duplicate (Yes/No)		No	Yes	No	No
1,2,4-Trichlorobenzene	70	<5	<5	<5	<5
1,2-Dichlorobenzene	600	<5	<5	<5	<5
1,3-Dichlorobenzene	NE	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5
2,4,5-Trichlorophenol	NE	<5	<5	<5	<5
2,4,6-Trichlorophenol	NE	<5	<5	<5	<5
2,4-Dichlorophenol	NE	<5	<5	<5	<5
2,4-Dimethylphenol	NE	<10	<10	<10	<10
2,4-Dinitrophenol	NE	<50	<50	<50	<50
2,4-Dinitrotoluene	NE	<5	<5	<5	<5
2,6-Dinitrotoluene	NE	<5	<5	<5	<5
2-Chloronaphthalene	NE	<5	<5	<5	<5
2-Chlorophenol	NE	<5	<5	<5	<5
2-Methyl-4,6-dinitrophenol	NE	<20	<20	<20	<20
2-Methylnaphthalene	NE	<5	7	<5	<5
2-Methylphenol	NE	<5	<5	<5	<5
2-Nitroaniline	NE	<20	<20	<20	<20
2-Nitrophenol	NE	<5	<5	<5	<5
3,3-Dichlorobenzidine	NE	<20	<20	<20	<20
3-Nitroaniline	NE	<20	<20	<20	<20
4-Bromophenyl phenyl ether	NE	<5	<5	<5	<5
4-Chloro-3-methylphenol	NE	<5	<5	<5	<5
4-Chloroaniline	NE	<5	<5	<5	<5
4-Chlorophenyl phenyl ether	NE	<5	<5	<5	<5
4-Nitroaniline	NE	<20	<20	<20	<20
4-Nitrophenol	NE	<50	<50	<50	<50
Acenaphthene	NE	<5	<5	<5	<5
Acenaphthylene	NE	<5	<5	<5	<5
Anthracene	NE	<5	<5	<5	<5
Benzo(a)anthracene	NE	<5	<5	<5	<5
Benzo(a)pyrene	0.2	<5	<5	<5	<5
Benzo(b)fluoranthene	NE	<5	<5	<5	<5
Benzo(g,h,i)perylene	NE	<5	<5	<5	<5
Benzo(k)fluoranthene	NE	<5	<5	<5	<5
Benzoic acid	NE	<50	<50	<50	<50
Benzyl alcohol	NE	<10	<10	<10	<10
Bis(2-chloroethoxy)methane	NE	<5	<5	<5	<5
Bis(2-chloroethyl) Ether	NE	<5	<5	<5	<5
Bis(2-chloroisopropyl) Ether	NE	<5	<5	<5	<5
Bis(2-ethylhexyl) Phthalate	4	<5	<5	<5	<5

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14
Field Sample Name		MW21QM299	HA20QM299	PM09QM299	PM14QM299
Sample Date		6/30/99	6/30/99	6/30/99	6/30/99
Duplicate (Yes/No)		No	Yes	No	No
Butyl benzyl phthalate	NE	<5	<5	<5	<5
Chrysene	NE	<5	<5	<5	<5
Di-n-butyl phthalate	NE	<5	<5	<5	<5
Di-n-octyl phthalate	NE	<5	<5	<5	<5
Dibenzo(a,h)anthracene	NE	<5	<5	<5	<5
Dibenzofuran	NE	<5	<5	<5	<5
Diethyl phthalate	NE	<5	<5	<5	<5
Dimethyl phthalate	NE	<5	<5	<5	<5
Fluoranthene	NE	<5	<5	<5	<5
Fluorene	NE	<5	<5	<5	<5
Hexachlorobenzene	1	<5	<5	<5	<5
Hexachlorobutadiene	NE	<10	<10	<10	<10
Hexachlorocyclopentadiene	50	<10	<10	<10	<10
Hexachloroethane	NE	<10	<10	<10	<10
Indeno(1,2,3-c,d)pyrene	NE	<5	<5	<5	<5
Isophorone	NE	<5	<5	<5	<5
N-Nitroso-di-n-propylamine	NE	<5	<5	<5	<5
N-Nitrosodiphenylamine	NE	<5	<5	<5	<5
Naphthalene	NE	<5	<5	<5	<5
Nitrobenzene	NE	<5	<5	<5	<5
Pentachlorophenol	1	<30	<30	<30	<30
Phenanthrene	NE	<5	<5	<5	<5
Phenol	NE	<5	<5	<5	<5
Pyrene	NE	<5	<5	<5	<5

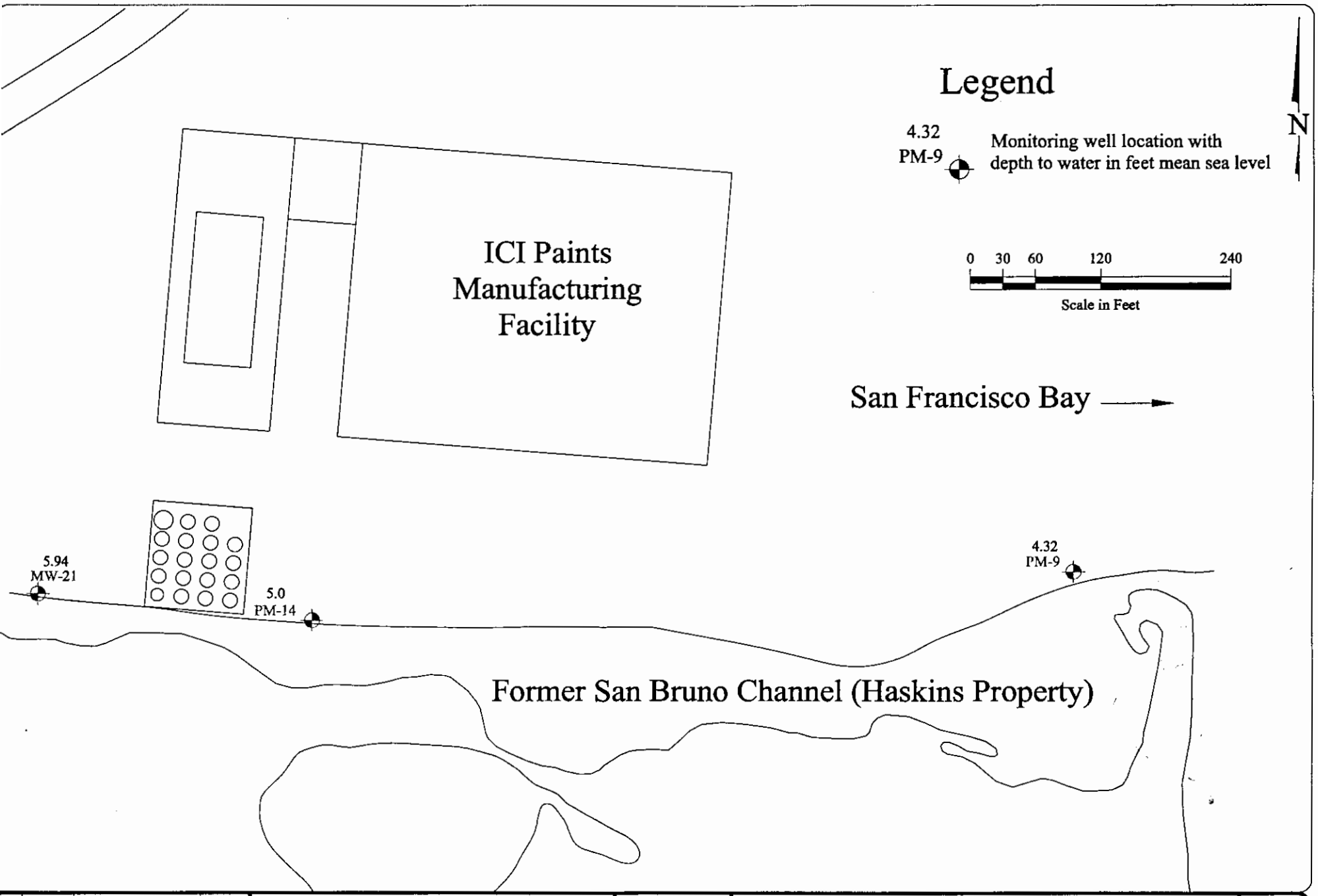
Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Concentrations in mg/L or Parts Per Million							
Well Number	PM-09	PM-09			PM-09	PM-09	
Field Sample ID	PM09QM299	HA20QM299			PM09QM299(F)	HA20QM299(F)	
Sample Date	6/30/99	6/30/99			6/30/99	6/30/99	
Duplicate	No	Yes	RPD		No	Yes	RPD
Metals Analyses	T	T			D	D	
Antimony	0.00106	0.00107	1%		0.00077	0.00062	22%
Arsenic	0.011	0.012	9%		0.003	0.003	0%
Beryllium	0.00016	0.00019	17%		0.00003	0.00002	40%
Cadmium	0.00268	0.00327	20%		0.00023	0.0002	14%
Chromium	0.093	0.108	15%		<0.004	<0.004	N/A
Copper	0.0212	0.0254	18%		0.0027	0.00153	55%
Lead	1.58	1.7	7%		0.0596	0.0347	53%
Mercury	0.0007	0.0006	15%		<0.0002	<0.0002	N/A
Nickel	0.0604	0.065	7%		0.00626	0.00556	12%
Selenium	<0.002	<0.002	N/A		<0.002	<0.002	N/A
Silver	0.00003	0.00004	29%		0.00472	<0.00002	99%
Thallium	0.00006	0.00006	0%		<0.00002	<0.00002	N/A
Zinc	0.553	0.648	16%		0.0383	0.0146	90%
Min of Abs RPD			0%				0%
Max of Abs RPD			29%				90%

Concentrations in µg/L or Parts Per Billion			
Well Number	**PM-09**		
Field Sample ID	PM09QM299	HA20QM299	
Sample Date	6/30/99	6/30/99	
Duplicate	No	Yes	RPD
1,1,1-Trichloroethane	<1	<1	N/A
1,1,2,2-Tetrachloroethane	<1	<1	N/A
1,1-Dichloroethane	<1	<1	N/A
1,1-Dichloroethene	<1	<1	N/A
1,2-Dichloroethane	<1	<1	N/A
1,2-Dichloropropane	<1	<1	N/A
2-Butanone	<4	<4	N/A
2-Hexanone	<4	<4	N/A
4-Methyl-2-pentanone	<10	<10	N/A
Acetone	5	4	22%
Benzene	45	49	9%
Bromodichloromethane	<1	<1	N/A
Bromoform	<1	<1	N/A
Bromomethane	<1	<1	N/A
Carbon Disulfide	<1	<1	N/A
Carbon Tetrachloride	<1	<1	N/A
Chlorobenzene	1	<1	0%
Chloroethane	<1	<1	N/A
Chloroform	<1	<1	N/A
Chloromethane	<1	<1	N/A
cis-1,2-Dichloroethene	<1	<1	N/A
cis-1,3-Dichloropropene	<1	<1	N/A
Dibromochloromethane	<1	<1	N/A
Ethylbenzene	4	4	0%
Methylene Chloride	<2	<2	N/A
Styrene	<1	<1	N/A
Tetrachloroethene	<1	<1	N/A
Toluene	<1	<1	N/A
trans-1,2-Dichloroethene	<1	<1	N/A
trans-1,3-Dichloropropene	<1	<1	N/A
Trichloroethene	<1	<1	N/A
Vinyl Acetate	<4	<4	N/A
Vinyl Chloride	<1	<1	N/A
Xylenes, Total	130	140	7%
Min of Abs RPD			0%
Max of Abs RPD			22%

Note:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs Absolute value
Dulicate analysis results of PM-09 samples for Semivolatile Organic Compounds were non-detect for all constituents and so do not support relative percent difference analysis
Dissolved samples were field filtered with a 5 micron filter
RPD Relative percent difference calculated as: (Primary Result-Duplicate Result)/(Mean of the both results) In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent detections where one compound was detected and one was not detected, and are included for comparison purposes only



No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
11875 Dublin Blvd., Suite A-200 • Dublin, California 94568

Date:	09/08/99
Designed:	OS
Drawn:	OS
Checked:	MH
DWG file:	6921-99

WATER LEVEL MAP
The O'Brien Corporation
450 East Grand Avenue
South San Francisco
California

Figure
1
Project
112.E.02

Appendix A

Laboratory Analytical Reports

Columbia Analytical Services INC.
An Employee-Owned Company

July 14, 1999

Service Request No.: S9901989

Mr. Mike Harrison
HENSHAW ASSOCIATES, INC.
607 Menlo Ave.
Menlo Park, CA 94025

RE: O'Brien/112.E.01

Dear Mr. Harrison:

Enclosed are the results of the sample(s) submitted to our laboratory on July 1, 1999. All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply to the sample(s) analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Signature of this CAS Analytical Report confirms that pages 2 through 41, following, have been thoroughly reviewed and approved for release.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1496, expiration: January 31, 2001).

If you have any question, please call me at (408) 748-9700.

Respectfully submitted,

Columbia Analytical Services, Inc.

Bernadette Troncales

Bernadette Troncales
Project Chemist

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS) and Duplicate Matrix Spike (DMS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Henshaw Associates, Inc.	**Service Request No.:**	K9904448
Project:	O'Brien/112.E.01	**Date Received:**	7/1/99
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP) and Matrix Spike (MS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

The Matrix Spike (MS) recovery of Mercury for sample "MW21QM299(F)" and Silver for sample "PM14QM299(F)" was outside the normal CAS control limits because of suspected matrix interference. Continuing Calibration Verifications (CCV) and Laboratory Control Samples (LCS) were within control limits indicating that the low recoveries were a result of the sample matrix. No further corrective action was taken.

The requested reporting limit for Chromium was not met. All samples were analyzed for Chromium by ICP method 7470A due to chloride interference in the samples that result in a high bias in the ICP/MS method 200.8 analysis.

Approved by _____ **Date** 07/15/99

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-001	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Vinyl Chloride	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Acrolein	EPA 5030A	8260	5	2	NA	7/9/99	<10	
Acetone	EPA 5030A	8260	2	2	NA	7/9/99	5	
1,1-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Iodomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Carbon Disulfide	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Methylene Chloride	EPA 5030A	8260	1	2	NA	7/9/99	<2	
Acrylonitrile	EPA 5030A	8260	5	2	NA	7/9/99	<10	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1-Dichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Vinyl Acetate	EPA 5030A	8260	2	2	NA	7/9/99	<4	
2-Butanone (MEK)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
2,2-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloroform	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromochloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Carbon Tetrachloride	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Benzene	EPA 5030A	8260	0.5	2	NA	7/9/99	45	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromodichloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Dibromomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
2-Hexanone	EPA 5030A	8260	2	2	NA	7/9/99	<4	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Toluene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-001	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	2	NA	7/9/99	<10	
1,3-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Dibromochloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Chlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	1	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Ethylbenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	4	
Total Xylenes	EPA 5030A	8260	0.5	2	NA	7/9/99	130	
Styrene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromoform	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Isopropylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	18	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
n-Propylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	14	
2-Chlorotoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
4-Chlorotoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
tert-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	6	
sec-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
4-Isopropyltoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
n-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	4	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	1	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Naphthalene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Hexachlorobutadiene	EPA 5030A	8260	2	2	NA	7/9/99	<4	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-003	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Vinyl Chloride	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Acrolein	EPA 5030A	8260	5	2	NA	7/9/99	<10	
Acetone	EPA 5030A	8260	2	2	NA	7/9/99	4	
1,1-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Iodomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Carbon Disulfide	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Methylene Chloride	EPA 5030A	8260	1	2	NA	7/9/99	<2	
Acrylonitrile	EPA 5030A	8260	5	2	NA	7/9/99	<10	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1-Dichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Vinyl Acetate	EPA 5030A	8260	2	2	NA	7/9/99	<4	
2-Butanone (MEK)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
2,2-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Chloroform	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromochloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Carbon Tetrachloride	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Benzene	EPA 5030A	8260	0.5	2	NA	7/9/99	49	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromodichloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Dibromomethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
2-Hexanone	EPA 5030A	8260	2	2	NA	7/9/99	<4	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Toluene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-003	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	2	NA	7/9/99	<10	
1,3-Dichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Dibromochloromethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Chlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Ethylbenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	4	
Total Xylenes	EPA 5030A	8260	0.5	2	NA	7/9/99	140	
Styrene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromoform	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Isopropylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	20	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
Bromobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
n-Propylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	15	
2-Chlorotoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
4-Chlorotoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	4	
tert-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	7	
sec-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	4	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
4-Isopropyltoluene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	<1	
n-Butylbenzene	EPA 5030A	8260	2	2	NA	7/9/99	4	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	2	NA	7/9/99	1	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Naphthalene	EPA 5030A	8260	2	2	NA	7/9/99	<4	
Hexachlorobutadiene	EPA 5030A	8260	2	2	NA	7/9/99	<4	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	7/9/99	ND	
Acetone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	7/9/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	7/9/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Acetate	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
2-Hexanone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	7/9/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	7/9/99	ND	
Acetone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	7/9/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	7/9/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Acetate	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
2-Hexanone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	7/9/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990708-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	7/8/99	ND	
Acetone	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	7/8/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	7/8/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Vinyl Acetate	EPA 5030A	8260	2	1	NA	7/8/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	2	1	NA	7/8/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
2-Hexanone	EPA 5030A	8260	2	1	NA	7/8/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990708-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	7/8/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	7/8/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/8/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	7/8/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	7/8/99	ND	

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990709-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Chloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichlorofluoromethane (CFC 11)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Acrolein	EPA 5030A	8260	5	1	NA	7/9/99	ND	
Acetone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Iodomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Disulfide	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Methylene Chloride	EPA 5030A	8260	1	1	NA	7/9/99	ND	
Acrylonitrile	EPA 5030A	8260	5	1	NA	7/9/99	ND	
trans-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Vinyl Acetate	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Butanone (MEK)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
cis-1,2-Dichloroethene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Chloroform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1-Trichloroethane (TCA)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Carbon Tetrachloride	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Benzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Trichloroethene (TCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromodichloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromomethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
2-Hexanone	EPA 5030A	8260	2	1	NA	7/9/99	ND	
cis-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Toluene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
trans-1,3-Dichloropropene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,2-Trichloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank (MSD1)	Units:	ug/L (ppb)
Lab Code:	S990709-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	EPA 5030A	8260	5	1	NA	7/9/99	ND	
1,3-Dichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Tetrachloroethene (PCE)	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Dibromochloromethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromoethane (EDB)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Chlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,1,1,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Ethylbenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Total Xylenes	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Styrene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromoform	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Isopropylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,1,2,2-Tetrachloroethane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2,3-Trichloropropane	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
Bromobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Propylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
2-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
4-Chlorotoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3,5-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
tert-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trimethylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
sec-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,3-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
4-Isopropyltoluene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,4-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
n-Butylbenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2-Dichlorobenzene	EPA 5030A	8260	0.5	1	NA	7/9/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
1,2,3-Trichlorobenzene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Naphthalene	EPA 5030A	8260	2	1	NA	7/9/99	ND	
Hexachlorobutadiene	EPA 5030A	8260	2	1	NA	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2P/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: S9901989
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Volatile Organic Compounds

Prep Method: EPA 5030A
Analysis Method: 8260

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery		
			Dibromofluoromethane	Toluene-D8	4-Bromofluorobenzene
PM09QM299	S9901989-001		100	104	109
HA20QM299	S9901989-003		98	104	108
PM14QM299	S9901989-005		100	104	94
MW21QM299	S9901989-007		100	105	97
BATCH QC	S9902010-002MS		100	104	94
BATCH QC	S9902010-002DMS		100	104	95
Method Blank (MSD1)	S990708-WB2		100	103	95
Method Blank (MSD1)	S990709-WB1		98	104	93
EPA Acceptance Limits:			86-118	88-110	86-115

Approved By: _____ Date: 07/15/99

SUR3/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	7/9/99

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	BATCH QC	Units:	ug/L (ppb)
Lab Code:	S9902010-002MS, S9902010-002DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
1,1-Dichloroethene	NONE	8260	0.5	10	10	ND	8.7	8.6	87	86	62-145	1	
Benzene	NONE	8260	0.5	10	10	ND	9.7	9.7	97	97	77-127	<1	
Trichloroethene	NONE	8260	0.5	10	10	ND	9.0	9.1	90	91	71-119	1	
Toluene	NONE	8260	0.5	10	10	ND	9.4	9.3	94	93	76-124	1	
Chlorobenzene	NONE	8260	0.5	10	10	ND	9.6	9.4	96	94	75-127	2	
1,2-Dichlorobenzene	NONE	8260	0.5	10	10	ND	8.9	8.8	89	88	74-126	1	
Naphthalene	NONE	8260	2	10	10	ND	4.7	6.6	47	66	43-157	34	

Approved By: _____ Date: 07/15/99

DMS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: S9901989
Date Collected: 6/30/99
Date Received: 7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: PM09QM299
Lab Code: S9901989-001
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Aniline	EPA 3510C	8270C	6	1	7/1/99	7/8/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Phenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Isophorone	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Fluorene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	7/1/99	7/8/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Chrysene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	

Approved By: _____ Date: 07/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Aniline	EPA 3510C	8270C	6	1	7/1/99	7/9/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Phenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Isophorone	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	7	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluorene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	7/1/99	7/9/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Chrysene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Aniline	EPA 3510C	8270C	6	1	7/1/99	7/9/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Phenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Isophorone	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluorene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	7/1/99	7/9/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Chrysene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Aniline	EPA 3510C	8270C	6	1	7/1/99	7/9/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Phenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Isophorone	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	7/1/99	7/9/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/9/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluorene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM299	Units:	ug/L (ppb)
Lab Code:	S9901989-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	7/1/99	7/9/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	7/1/99	7/9/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Chrysene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	7/1/99	7/9/99	ND	

Approved By: _____ Date: 07/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S9900701-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Pyridine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
N-Nitrosodimethylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Aniline	EPA 3510C	8270C	6	1	7/1/99	7/8/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Phenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Chlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,3-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,4-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
1,2-Dichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzyl Alcohol	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachloroethane	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3- and 4-Methylphenol*	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Nitrobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Isophorone	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Nitrophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4-Dimethylphenol	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4-Dichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzoic Acid	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Naphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Chloroaniline	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorobutadiene	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
4-Chloro-3-methylphenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Methylnaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorocyclopentadiene	EPA 3510C	8270C	10	1	7/1/99	7/8/99	ND	
2,4,6-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,4,5-Trichlorophenol	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Chloronaphthalene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
Acenaphthylene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Dimethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
2,6-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Acenaphthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
2,4-Dinitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
Dibenzofuran	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Nitrophenol	EPA 3510C	8270C	50	1	7/1/99	7/8/99	ND	
2,4-Dinitrotoluene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Fluorene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	

* Quantified as 4-methylphenol.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S9900701-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Nitroaniline	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
N-Nitrosodiphenylamine	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Hexachlorobenzene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Pentachlorophenol	EPA 3510C	8270C	30	1	7/1/99	7/8/99	ND	
Phenanthrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Di-n-butyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Butyl Benzyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
3,3'-Dichlorobenzidine	EPA 3510C	8270C	20	1	7/1/99	7/8/99	ND	
Benz(a)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Chrysene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Di-n-octyl Phthalate	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(b)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(k)fluoranthene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(a)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Dibenz(a,h)anthracene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	
Benzo(g,h,i)perylene	EPA 3510C	8270C	5	1	7/1/99	7/8/99	ND	

Approved By: _____ Date: 07/15/99

1S2p/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: S9901989
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds

Prep Method: EPA 3510C
Analysis Method: 8270C

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 2FPHL	PHL	NBZ	2FBPH	246TBPHL	TPH
PM09QM299	S9901989-001		10 S1	14	59	66	27	87
HA20QM299	S9901989-003		28	18	73	80	102	106
PM14QM299	S9901989-005		34	21	79	78	105	107
MW21QM299	S9901989-007		21	13	50	55	82	87
Lab Control Sample	S9900701-WL1		32	19	71	71	95	94
Lab Control Sample	S9900701-WL2		31	20	73	72	94	96
Method Blank	S9900701-WB1		32	20	73	71	93	97
CAS Acceptance Limits:			21-100	10-94	35-114	43-116	10-123	33-141

2FPHL	2-Fluorophenol
PHL	Phenol-D6
NBZ	Nitrobenzene-D5
2FBPH	2-Fluorobiphenyl
246TBPHL	2,4,6-Tribromophenol
TPH	Terphenyl-D14

S1 Surrogate recovery out of control limits. Insufficient sample given to perform re-extraction and re-analysis.

Approved By: _____ Date: 07/15/99

SUR6/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9901989
Project:	O'Brien/112.E.01	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	
		Date Analyzed:	

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds

Sample Name: Lab Control Sample
Lab Code: S9900701-WL2, S9900701-WL2
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	True Value LCS	True Value DLCS	Result LCS	Result DLCS	Percent Recovery LCS	Percent Recovery DLCS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Phenol	EPA 3510C	8270C	100	100	19	19	19	19	5-112	< 1	
2-Chlorophenol	EPA 3510C	8270C	100	100	70	70	70	70	23-134	< 1	
1,4-Dichlorobenzene	EPA 3510C	8270C	50	50	38	40	76	80	20-124	5	
N-Nitrosodi-n-propylamine	EPA 3510C	8270C	50	50	44	44	88	88	D-230	< 1	
1,2,4-Trichlorobenzene	EPA 3510C	8270C	50	50	41	42	82	84	44-142	2	
4-Chloro-3-methylphenol	EPA 3510C	8270C	100	100	81	81	81	81	22-147	< 1	
Acenaphthene	EPA 3510C	8270C	50	50	42	43	84	86	47-145	2	
4-Nitrophenol	EPA 3510C	8270C	100	100	18	18	18	18	D-132	< 1	
2,4-Dinitrotoluene	EPA 3510C	8270C	50	50	45	45	90	90	39-139	< 1	
Pentachlorophenol	EPA 3510C	8270C	100	100	111	110	111	110	14-176	< 1	
Pyrene	EPA 3510C	8270C	50	50	50	51	100	102	52-115	2	

Approved By: _____ Date: 07/15/99

DLCS/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associaates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: K9904448
Date Collected: 6/30/99
Date Received: 7/1/99

Total Metals

Sample Name: PM09QM299
Lab Code: K9904448-001
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	1.06	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	11	
Beryllium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.16	
Cadmium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	2.68	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	93	
Copper	CLFAA	200.8	0.1	0.05	2	7/12/99	7/13/99	21.2	
Lead	CLFAA	200.8	0.02	0.007	20	7/12/99	7/13/99	1580	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	0.7	
Nickel	CLFAA	200.8	0.2	0.05	2	7/12/99	7/13/99	60.4	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.03	
Thallium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.06	
Zinc	CLFAA	200.8	0.5	0.08	2	7/12/99	7/13/99	553	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associaates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: K9904448
Date Collected: 6/30/99
Date Received: 7/1/99

Total Metals

Sample Name: HA20QM299
Lab Code: K9904448-003
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	1.07	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	12	
Beryllium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.19	
Cadmium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	3.27	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	108	
Copper	CLFAA	200.8	0.1	0.05	2	7/12/99	7/13/99	25.4	
Lead	CLFAA	200.8	0.02	0.007	20	7/12/99	7/13/99	1700	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	0.6	
Nickel	CLFAA	200.8	0.2	0.05	2	7/12/99	7/13/99	65.0	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.04	
Thallium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.06	
Zinc	CLFAA	200.8	0.5	0.08	2	7/12/99	7/13/99	648	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Total Metals

Sample Name:	PM14QM299	Units:	ug/L (ppb)
Lab Code:	K9904448-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.19	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	5	
Beryllium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.27	
Cadmium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.32	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	479	
Copper	CLFAA	200.8	0.1	0.05	1	7/12/99	7/13/99	15.4	
Lead	CLFAA	200.8	0.02	0.007	1	7/12/99	7/13/99	25.2	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	0.2	J
Nickel	CLFAA	200.8	0.2	0.05	1	7/12/99	7/13/99	144	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.06	
Thallium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.07	
Zinc	CLFAA	200.8	0.5	0.08	1	7/12/99	7/13/99	29.7	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Total Metals

Sample Name:	MW21QM299	Units:	ug/L (ppb)
Lab Code:	K9904448-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	21.6	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	36	
Beryllium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.47	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	ND	
Copper	CLFAA	200.8	0.1	0.05	2	7/12/99	7/13/99	3.67	
Lead	CLFAA	200.8	0.02	0.007	2	7/12/99	7/13/99	53.9	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	2	7/12/99	7/13/99	14.1	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.03	
Thallium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	2	7/12/99	7/13/99	53.4	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Dissolved Metals

Sample Name:	PM09QM299(F)	Units:	ug/L (ppb)
Lab Code:	K9904448-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.77	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	3	J
Beryllium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.03	
Cadmium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.23	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	7/12/99	7/13/99	2.7	
Lead	CLFAA	200.8	0.02	0.007	1	7/12/99	7/13/99	59.6	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	7/12/99	7/13/99	6.26	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	4.72	
Thallium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	7/12/99	7/13/99	38.3	

Approved By: MT Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Dissolved Metals

Sample Name:	HA20QM299(F)	Units:	ug/L (ppb)
Lab Code:	K9904448-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.62	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	3	J
Beryllium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.02	
Cadmium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.20	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	7/12/99	7/13/99	1.53	
Lead	CLFAA	200.8	0.02	0.007	1	7/12/99	7/13/99	34.7	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	7/12/99	7/13/99	5.56	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	7/12/99	7/13/99	14.6	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Dissolved Metals

Sample Name:	PM14QM299(F)	Units:	ug/L (ppb)
Lab Code:	K9904448-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.29	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	3	J
Beryllium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	0.11	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	6	
Copper	CLFAA	200.8	0.1	0.05	1	7/12/99	7/13/99	2.19	
Lead	CLFAA	200.8	0.02	0.007	1	7/12/99	7/13/99	1.07	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	7/12/99	7/13/99	9.74	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	7/12/99	7/13/99	22.1	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99

Dissolved Metals

Sample Name:	MW21QM2999(F)	Units:	ug/L (ppb)
Lab Code:	K9904448-008	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	18.3	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	23	
Beryllium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.33	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	ND	
Copper	CLFAA	200.8	0.1	0.05	2	7/12/99	7/13/99	2.92	
Lead	CLFAA	200.8	0.02	0.007	2	7/12/99	7/13/99	0.72	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	2	7/12/99	7/13/99	7.58	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	0.03	
Thallium	CLFAA	200.8	0.02	0.02	2	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	2	7/12/99	7/13/99	18.9	

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Total Metals

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	K9904448-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Arsenic	CLFAA	7060A	5	1	1	7/12/99	7/12/99	ND	
Beryllium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Chromium	CLAA	6010B	5	4	1	7/12/99	7/13/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	7/12/99	7/13/99	ND	
Lead	CLFAA	200.8	0.02	0.007	1	7/12/99	7/13/99	ND	
Mercury	7470A	7470A	0.2	0.1	1	7/13/99	7/13/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	7/12/99	7/13/99	ND	
Selenium	CLFAA	7740	5	2	1	7/12/99	7/12/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	7/12/99	7/13/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	7/12/99	7/13/99	0.1	J

Approved By: _____ Date: 07/15/99

QA/QC Report

Client: Henshaw Associaates, Inc.
Project: O'Brien/112.E.01
Sample Matrix: Water

Service Request: K9904448
Date Collected: 6/30/99
Date Received: 7/1/99
Date Extracted: 7/12/99
Date Analyzed: 7/12-13/99

Duplicate Summary
Dissolved Metals

Sample Name: HA20QM299(F)
Lab Code: K9904448-004DUP
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	CLFAA	200.8	0.02	0.62	0.62	0.62	<1	
Arsenic	CLFAA	7060A	5	3	2	2	50	J
Beryllium	CLFAA	200.8	0.02	0.02	0.2	0.2	<1	
Cadmium	CLFAA	200.8	0.02	0.20	0.21	0.20	5	
Chromium	CLAA	6010B	5	ND	ND	ND	-	
Copper	CLFAA	200.8	0.1	1.53	1.78	1.66	15	
Lead	CLFAA	200.8	0.02	34.7	34.7	34.7	<1	
Mercury	7470A	7470A	0.2	ND	ND	ND	-	L
Nickel	CLFAA	200.8	0.2	5.56	5.49	5.52	1	
Selenium	CLFAA	7740	5	ND	ND	ND	ND	-
Silver	CLFAA	200.8	0.02	ND	ND	ND	ND	-
Thallium	CLFAA	200.8	0.02	ND	ND	ND	ND	-
Zinc	CLFAA	200.8	0.5	14.6	15.4	15.0	5	

L Duplicate analysis was performed on Sample MW21QM299(F); Lab Code K9904448-008.

Approved By: _____ Date: 07/15/99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associaates, Inc.	**Service Request:**	K9904448
Project:	O'Brien/112.E.01	**Date Collected:**	6/30/99
Sample Matrix:	Water	**Date Received:**	7/1/99
		Date Extracted:	7/12/99
		Date Analyzed:	7/12-13/99

Matrix Spike Summary
Dissolved Metals

Sample Name:	PM14QM299(F)	Units:	ug/L (ppb)
Lab Code:	K9904448-006MS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Antimony	CLFAA	200.8	0.02	20	0.29	20.7	102	75-125	
Arsenic	CLFAA	7060A	5	20	3	24	105	75-125	
Beryllium	CLFAA	200.8	0.02	20	ND	18.9	94	75-125	
Cadmium	CLFAA	200.8	0.02	20	0.11	19.3	96	75-125	
Chromium	CLAA	6010B	5	200	6	200	97	75-125	
Copper	CLFAA	200.8	0.1	20	2.19	19.1	85	75-125	
Lead	CLFAA	200.8	0.02	20	1.07	20.2	96	75-125	
Mercury	7470A	7470A	0.2	1.0	ND	0.7	70	75-125	M, A
Nickel	CLFAA	200.8	0.2	20	9.74	27.0	86	75-125	
Selenium	CLFAA	7740	5	20	ND	19	95	75-125	
Silver	CLFAA	200.8	0.02	20	ND	14.8	74	75-125	A
Thallium	CLFAA	200.8	0.02	20	ND	19.1	96	75-125	
Zinc	CLFAA	200.8	0.5	20	22.1	39.1	85	75-125	

A	Outside acceptance limits; see case narrative.
M	Matrix Spike analysis was performed on Sample MW21QM299(F); Lab Code K9904448-008.

Approved By: _____ Date: 07/15/99

Columbia Analytical Services INC.
An Employee-Owned Company
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

SERVICE REQUEST NO. S9901989 P.O.# 112.E.01 PAGE 1 OF 1

PROJECT NAME O'Brien #
PROJECT MGR. Michael Harrison
COMPANY Henshaw Associates
ADDRESS 11875 Dublin Blvd. Suite A-200
Dublin CA 94568 PHONE (925)551-7272
FAX (925)551-7464
SAMPLER'S SIGNATURE Charles Ice

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☒ (PRESERVATIVE)	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐ (HCl)	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐ (HCl)	TPH as Diesel ☐ HBHC ☐ (HCl)	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☒ (NP)	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐ (NP)	TRPH - 418.1 ☐ Oil and Grease Method (NP)	Metals Indicate below Total ☒ Dissolved ☐ PPM (HCl)	pH, Cond, Cl, SO4, F, TDS, TSS Alk, NO3, NO2 (circle) (HNO3)	NH3-N, COD, Total-P, TKN, TOC NO3 / NO2, Phenols (circle) (NP)	Cyanide (H2SO4)	Metals Diss. PPM (NaOH)						REMARKS*
PM09QM299	6/30	2:00PM	1	Water	6	X				X			X										
PM09QM299(F)	↓	↓	2	↓	1												X						
HA20QM299	↓	↓	3	↓	6	X				X			X										
HA20QM299(F)	↓	↓	4	↓	1												X						
PM14QM299	↓	12:00PM	5	↓	6	X				X			X										
PM14QM299(F)	↓	12:00PM	6	↓	1												X						
MW21QM299	↓	3:00PM	7	↓	6	X				X			X										
MW21QM299(F)	↓	3:00PM	8	↓	1												X						

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Charles Ice	Signature: Joseph Machado	Signature	Signature
Printed Name: Charles Ice	Printed Name: JOSEPH MACHADO	Printed Name	Printed Name
Firm: Henshaw Associates	Firm: CAS	Firm	Firm
Date/Time: 7/1/99 800	Date/Time: 7/1/99 800	Date/Time	Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due ~~7/16/99~~ 7/9/99 JM

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
X Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS:
Circle which metals are to be analyzed:
Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn As Pb Se Tl Hg PPM

R11/D2 R8/D3

Shipped Via/Tracking #

Storage:

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☒ No If yes, you must so indicate by writing "DW" for each such sample.

Southern Property Boundary Groundwater Sampling QM1-1999

450 East Grand Avenue
So. San Francisco, California

July 6, 1999

Prepared for:
Environmental Protection Agency

Prepared by:

Henshaw Associates, Inc.
Environmental Engineering Services

Henshaw Associates, Inc.
Environmental Engineering Services

July 6, 1999

Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Southern Property Boundary Groundwater Sampling, QM1-1999
The O'Brien Corporation Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency Region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for The O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), first quarter 1999 (QM1-99) groundwater monitoring has been completed by Henshaw Associates, Inc. (Henshaw) on behalf of O'Brien. The monitoring is designed to evaluate groundwater along the southern boundary of the Property and the neighboring ICI Paint property by sampling existing monitoring wells. Sample locations are presented on Figure 1.

In keeping with our conversation of May 26, 1998, and previous submittals, the results of QM1-99 monitoring have been incorporated in this letter.

Site Setting

The Property is located at 450 East Grand Avenue in South San Francisco, California. For the purpose of this discussion, the Property shall include the land occupied by the ICI Paint manufacturing facility. The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The property is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

Geology

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay

11875 Dublin Blvd. Suite A-200 • Dublin, California 94568 • T: 925/551-7272 F: 925/551-7464

deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as Bay Mud. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

Hydrogeology

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of the monitoring wells sampled during QM1-99 was 25 feet BGS.

Field Activities

Sampling of the Southern Boundary groundwater was conducted on March 10, 1999. Three monitoring wells were sampled including MW-21, PM-09, and PM-14. Water levels were taken from the three wells prior to initiation of well purging. Table 1 presents well construction details and depth to water measurements. Monitoring wells were purged with dedicated tubing and a peristaltic pump, and sampled with dedicated bailers. Samples were collected from PM-09 and PM-14 when the monitoring wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes. MW-21, which was purged dry, was sampled after three hours were allowed to elapse. Samples were analyzed in accordance with the Workplan for priority pollutant metals (PPMs) by EPA 6000/7000, VOCs by EPA 8240, and SVOCs by EPA 8270. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 5-micron filters and field preserved for dissolved analysis. Field parameters were recorded and are presented in Table 2.

Analytical Results

In the following discussion, metals results are presented in mg/L or parts per million while volatile organic compounds are presented in µg/L or parts per billion. No semivolatile organic compounds were positively detected in samples collected during QM1-99 monitoring. Samples field preserved but not field filtered are discussed as "total" metals samples while field filtered, preserved samples are termed "dissolved".

Metals

Complete metals analytical results are presented in Table 3. Antimony was detected in total and dissolved metals samples from MW-21 at 0.016 mg/L and 0.0158 mg/L, respectively, but at very low levels in samples collected from PM-09 and PM-14. Arsenic was also detected in total and dissolved metals samples collected from MW-21 at 0.068 mg/L and 0.074 mg/L, respectively, while arsenic was detected at very low levels in samples collected from PM-09 and PM-14. Chromium was detected in total metals samples collected from PM-09 and PM-14 at 0.01 mg/L and 0.008 mg/L, respectively. Lead was detected in both total and dissolved samples collected from the three wells sampled during the QM1-99 sampling event at levels ranging from 0.00022 mg/L (PM-14, dissolved) to 0.0831 mg/L (PM-09, total). Nickel was detected in all samples

collected during QM1-99, with maximum detection in the sample collected from PM-14 at 0.0113 mg/L. Selenium was only detected in the total metals sample collected from PM-09 at 0.002 mg/L. Thallium was detected only in the dissolved metals sample collected from PM-14 at 0.00004 mg/L (see Table 3). Beryllium and silver were detected in several samples collected from the three wells sampled during the QM1-99 sampling event at very low levels. Cadmium, copper, and zinc were detected in all total and dissolved metals samples collected from MW-21, PM-09 and PM-14 at very low levels.

Volatile Organic Compounds

Volatile organic compounds (Table 4) benzene, ethylbenzene, and total xylenes were detected in samples collected from PM-09 at concentrations ranging from 13 µg/L of ethylbenzene (PM-09 duplicate) to 400 µg/L of total xylenes (PM-09 primary). These detections are similar to historical concentrations.

Semivolatile Organic Compounds

Isophorone was the only semivolatile organic compound (Table 5) detected during the QM1-99 sampling round in samples collected from MW-21 at a concentration of 30 µg/L.

Quality Control Samples

Relative percent difference (RPD) comparison between primary and duplicate samples collected from PM-09 during QM1-99 activities revealed that project targets for dissolved and total metals (detections at greater than four times the laboratory reporting limit have a RPD less then or equal to 30%) were met except for dissolved zinc (108%). The large difference between zinc concentrations found in the primary and duplicate samples was reported to the analytical laboratory (Columbia Analytical Services). Zinc has not been a constituent of concern at this site and was detected in samples collected from PM-09 at such low levels that the large RPD is not of concern. Only three VOCs were available for comparison of RPDs: benzene, ethylbenzene, and total xylenes. The RPD for all three VOCs were acceptable. There were no VOCs detected in the trip blank sample submitted during the QM1-99 sample round.

Water Levels

Water levels taken during the first quarter 1999 monitoring event are presented on Table 1 and Figure 1. The monitored wells are linearly arranged on an east-west axis and do not provide information on north-south trends in groundwater flow. Based upon the QM1-99 readings, the groundwater surface has an easterly trend at approximately 0.0019 ft/ft.

Summary

Low concentrations of metals were detected in water samples collected from MW-21, PM-09 and PM-14. Concentrations of dissolved, and thus mobile, metals detected in samples collected during monitoring activities continue to be at very low levels. Concentrations of benzene, ethylbenzene and total xylenes were detected in samples collected from PM-09. Only the semivolatile organic compound isophorone was detected in samples collected during QM1-99. Analytical results from QM1-99 are consistent with historical values.

Based upon the results of first quarter 1999 monitoring, it is apparent that there are not significant levels of mobile metals moving within the shallow groundwater beneath the subject property. Low levels of volatile organic compounds can be found in groundwater proximate to monitoring well PM-09.

Please contact me at (925) 551-7272 with any questions.

Respectfully Submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Well Construction Details and Water Levels
Table 2	Field Parameters
Table 3	Metals Analytical Summary
Table 4	Volatile Organic Compounds Analytical Summary
Table 5	Semivolatile Organic Compounds Analytical Summary
Table 6	Relative Percent Difference Analyses
Figure 1	Property Information (Well locations with groundwater elevation information)
Appendix A	Laboratory Analytical Reports

cc: Mr. Alan Seeling, Cherokee Environmental Risk Management
Mr. Fasil Tegene, ICI

TABLE 1
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Well ID	Installation Date	Stick Up (ft.)	Total Depth[1] (ft. BMP)	Total Depth[2] (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch.)	Depth to Water 3/10/99 (ft. BGS)	Groundwater Elevation 3/10/99 (ft. MSL)
MW-21	9/2/1987	2.0	24.7	25.0	12.24	13.0	23.0	10.0	25.0	4	9.99	2.25
PM-09	8/28/1987	2.0	14.8	14.0	10.07	8.0	13.0	5.0	13.5	2	5.06	5.01
PM-14	12/10/1993	0.0	9.8	12.0	9.35	7.0	12.0	6.0	10.0	2	2.85	6.50

Note:
BGS Below ground surface
BMP Below measuring point
MSL Mean sea level
[1] Depth measured in the field
[2] Depth from boring logs

TABLE 2
FIELD PARAMETERS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Sample Location	MW-21	PM-09	PM-14
Measurement Date	3/10/1999	3/10/1999	3/10/1999
pH	7.08	9.01	8.87
Conductance (µmhos/cm)	4510	3580	1110
Temperature (°F)	63.6	63.2	57.6
Turbidity (NTU)	7.21	52.7	6.88

Note:
BGS Below ground surface

TABLE 3
METALS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location		MW-21	MW-21	PM-09	PM-09	PM-09	PM-09	PM-14	PM-14
Field Sample ID		MW21QM199	MW21QM199F	HA20QM199	HA20QM199F	PM09QM199	PM09QM199F	PM14QM199	PM14QM199F
Sample Date		3/10/99	3/10/99	3/10/99	3/10/99	3/10/99	3/10/99	3/10/99	3/10/99
Duplicate (Yes/No)		No	No	Yes	Yes	No	No	No	No
Total (T) or Dissolved (D)	MCL	T	D	T	D	T	D	T	D
Antimony	0.006	0.016	0.0158	0.00047	<0.00002	0.00052	0.00045	0.00013	0.00011
Arsenic	0.05	0.068	0.074	0.002	0.001	0.002	0.001	0.005	0.002
Beryllium	0.004	<0.00002	0.00002	0.00005	0.00005	0.00006	0.00005	0.00002	<0.00002
Cadmium	0.005	0.00005	0.00005	0.00011	0.00004	0.00023	0.00003	0.00023	0.00002
Chromium	0.05	<0.005	<0.005	0.01	<0.005	0.01	<0.005	0.008	<0.005
Copper	11	0.0013	0.0018	0.0019	0.001	0.0023	0.0005	0.0013	0.0009
Lead	0.05	0.00358	0.00053	0.0688	0.00314	0.0831	0.003	0.00127	0.00022
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	0.1	0.0071	0.0065	0.0069	0.0034	0.0078	0.0033	0.0113	0.0052
Selenium	0.05	<0.005	<0.005	0.002	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	0.1	0.00005	0.00003	<0.00002	<0.00002	0.00004	<0.00002	0.00004	<0.00002
Thallium	0.002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004
Zinc	5	0.011	0.0286	0.0308	0.029	0.0377	0.0087	0.0179	0.0143

Note:
<# Below detection limit
MCL California Maximum Contaminant Level

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14	Trip Blank
Field Sample Name		MW21QM199	PM09QM199	HA20QM199	PM14QM199	TB1
Sample Date		3/10/1999	3/10/99	3/10/99	3/10/99	3/10/99
Duplicate		No	No	Yes	No	No
1,1,1-Trichloroethane	200	<0.5	<2.5	<1	<0.5	<0.5
1,1,2,2-Tetrachloroethane	1	<0.5	<2.5	<1	<0.5	<0.5
1,1-Dichloroethane	5	<0.5	<2.5	<1	<0.5	<0.5
1,1-Dichloroethene	6	<0.5	<2.5	<1	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<2.5	<1	<0.5	<0.5
1,2-Dichloropropane	5	<0.5	<2.5	<1	<0.5	<0.5
2-Butanone	NE	<5	<25	<10	<5	<5
2-Hexanone	NE	<5	<25	<10	<5	<5
4-Methyl-2-pentanone	NE	<5	<25	<10	<5	<5
Acetone	NE	<20	<100	<40	<20	<20
Benzene	1	<0.5	89	81	<0.5	<0.5
Bromodichloromethane	100(1)	<0.5	<2.5	<1	<0.5	<0.5
Bromoform	100(1)	<0.5	<2.5	<1	<0.5	<0.5
Bromomethane	100(1)	<0.5	<2.5	<1	<0.5	<0.5
Carbon Disulfide	NE	<0.5	<2.5	<1	<0.5	<0.5
Carbon Tetrachloride	0.5	<0.5	<2.5	<1	<0.5	<0.5
Chlorobenzene	70	<0.5	<2.5	<1	<0.5	<0.5
Chloroethane	NE	<0.5	<2.5	<1	<0.5	<0.5
Chloroform	100(1)	<0.5	<2.5	<1	<0.5	<0.5
Chloromethane	NE	<0.5	<2.5	<1	<0.5	<0.5
cis-1,2-Dichloroethene	6	<0.5	<2.5	<1	<0.5	<0.5
cis-1,3-Dichloropropene	0.5(2)	<0.5	<2.5	<1	<0.5	<0.5
Dibromochloromethane	100(1)	<0.5	<2.5	<1	<0.5	<0.5
Ethylbenzene	700	<0.5	14	13	<0.5	<0.5
Methylene Chloride	5	<1	<5	<2	<1	<1
Styrene	100	<0.5	<2.5	<1	<0.5	<0.5
Tetrachloroethene	5	<0.5	<2.5	<1	<0.5	<0.5
Toluene	150	<0.5	<2.5	<1	<0.5	<0.5
trans-1,2-Dichloroethene	10	<0.5	<2.5	<1	<0.5	<0.5
trans-1,3-Dichloropropene	NE	<0.5	<2.5	<1	<0.5	<0.5
Trichloroethene	5	<0.5	<2.5	<1	<0.5	<0.5
Vinyl Acetate	NE	<5	<25	<10	<5	<5
Vinyl Chloride	0.5	<0.5	<2.5	<1	<0.5	<0.5
Xylenes, Total	1750	<0.5	400	370	<0.5	<0.5

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14
Field Sample Name		MW21QM199	HA20QM199	PM09QM199	PM14QM199
Sample Date		3/10/1999	3/10/1999	3/10/1999	3/10/1999
Duplicate (Yes/No)		No	Yes	No	No
1,2,4-Trichlorobenzene	70	<5	<5	<5	<5
1,2-Dichlorobenzene	600	<5	<5	<5	<5
1,3-Dichlorobenzene	NE	<5	<5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5
2,4,5-Trichlorophenol	NE	<5	<5	<5	<5
2,4,6-Trichlorophenol	NE	<5	<5	<5	<5
2,4-Dichlorophenol	NE	<50	<50	<50	<50
2,4-Dimethylphenol	NE	<10	<10	<10	<10
2,4-Dinitrophenol	NE	<50	<50	<50	<50
2,4-Dinitrotoluene	NE	<50	<50	<50	<50
2,6-Dinitrotoluene	NE	<5	<5	<5	<5
2-Chloronaphthalene	NE	<5	<5	<5	<5
2-Chlorophenol	NE	<5	<5	<5	<5
2-Methyl-4,6-dinitrophenol	NE	<20	<20	<20	<20
2-Methylnaphthalene	NE	<5	<5	<5	<5
2-Methylphenol	NE	<5	<5	<5	<5
2-Nitroaniline	NE	<20	<20	<20	<20
2-Nitrophenol	NE	<5	<5	<5	<5
3,3-Dichlorobenzidine	NE	<20	<20	<20	<20
3-Nitroaniline	NE	<5	<5	<5	<5
4-Bromophenyl phenyl ether	NE	<20	<20	<20	<20
4-Chloro-3-methylphenol	NE	<5	<5	<5	<5
4-Chloroaniline	NE	<5	<5	<5	<5
4-Chlorophenyl phenyl ether	NE	<5	<5	<5	<5
4-Methylphenol	NE	<5	<5	<5	<5
4-Nitroaniline	NE	<20	<20	<20	<20
4-Nitrophenol	NE	<50	<50	<50	<50
Acenaphthene	NE	<5	<5	<5	<5
Acenaphthylene	NE	<5	<5	<5	<5
Anthracene	NE	<5	<5	<5	<5
Benzo(a)anthracene	NE	<5	<5	<5	<5
Benzo(a)pyrene	0.2	<5	<5	<5	<5
Benzo(b)fluoranthene	NE	<5	<5	<5	<5
Benzo(g,h,i)perylene	NE	<5	<5	<5	<5
Benzo(k)fluoranthene	NE	<5	<5	<5	<5
Benzoic acid	NE	<50	<50	<50	<50
Benzyl alcohol	NE	<10	<10	<10	<10
Bis(2-chloroethoxy)methane	NE	<5	<5	<5	<5
Bis(2-chloroethyl) Ether	NE	<5	<5	<5	<5
Bis(2-chloroisopropyl) Ether	NE	<5	<5	<5	<5
Bis(2-ethylhexyl) Phthalate	4	<5	<5	<5	<5
Butyl benzyl phthalate	NE	<5	<5	<5	<5

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-21	PM-09	PM-09	PM-14
Field Sample Name		MW21QM199	HA20QM199	PM09QM199	PM14QM199
Sample Date		3/10/1999	3/10/1999	3/10/1999	3/10/1999
Duplicate (Yes/No)		No	Yes	No	No
Chrysene	NE	<5	<5	<5	<5
Di-n-butyl phthalate	NE	<5	<5	<5	<5
Di-n-octyl phthalate	NE	<5	<5	<5	<5
Dibenzo(a,h)anthracene	NE	<5	<5	<5	<5
Dibenzofuran	NE	<5	<5	<5	<5
Diethyl phthalate	NE	<5	<5	<5	<5
Dimethyl phthalate	NE	<5	<5	<5	<5
Fluoranthene	NE	<5	<5	<5	<5
Fluorene	NE	<5	<5	<5	<5
Hexachlorobenzene	1	<5	<5	<5	<5
Hexachlorobutadiene	NE	<10	<10	<10	<10
Hexachlorocyclopentadiene	50	<10	<10	<10	<10
Hexachloroethane	NE	<10	<10	<10	<10
Indeno(1,2,3-c,d)pyrene	NE	<5	<5	<5	<5
Isophorone	NE	**30**	<5	<5	<5
N-Nitroso-di-n-propylamine	NE	<5	<5	<5	<5
N-Nitrosodiphenylamine	NE	<5	<5	<5	<5
Naphthalene	NE	<5	<5	<5	<5
Nitrobenzene	NE	<5	<5	<5	<5
Pentachlorophenol	1	<30	<30	<30	<30
Phenanthrene	NE	<5	<5	<5	<5
Phenol	NE	<5	<5	<5	<5
Pyrene	NE	<5	<5	<5	<5

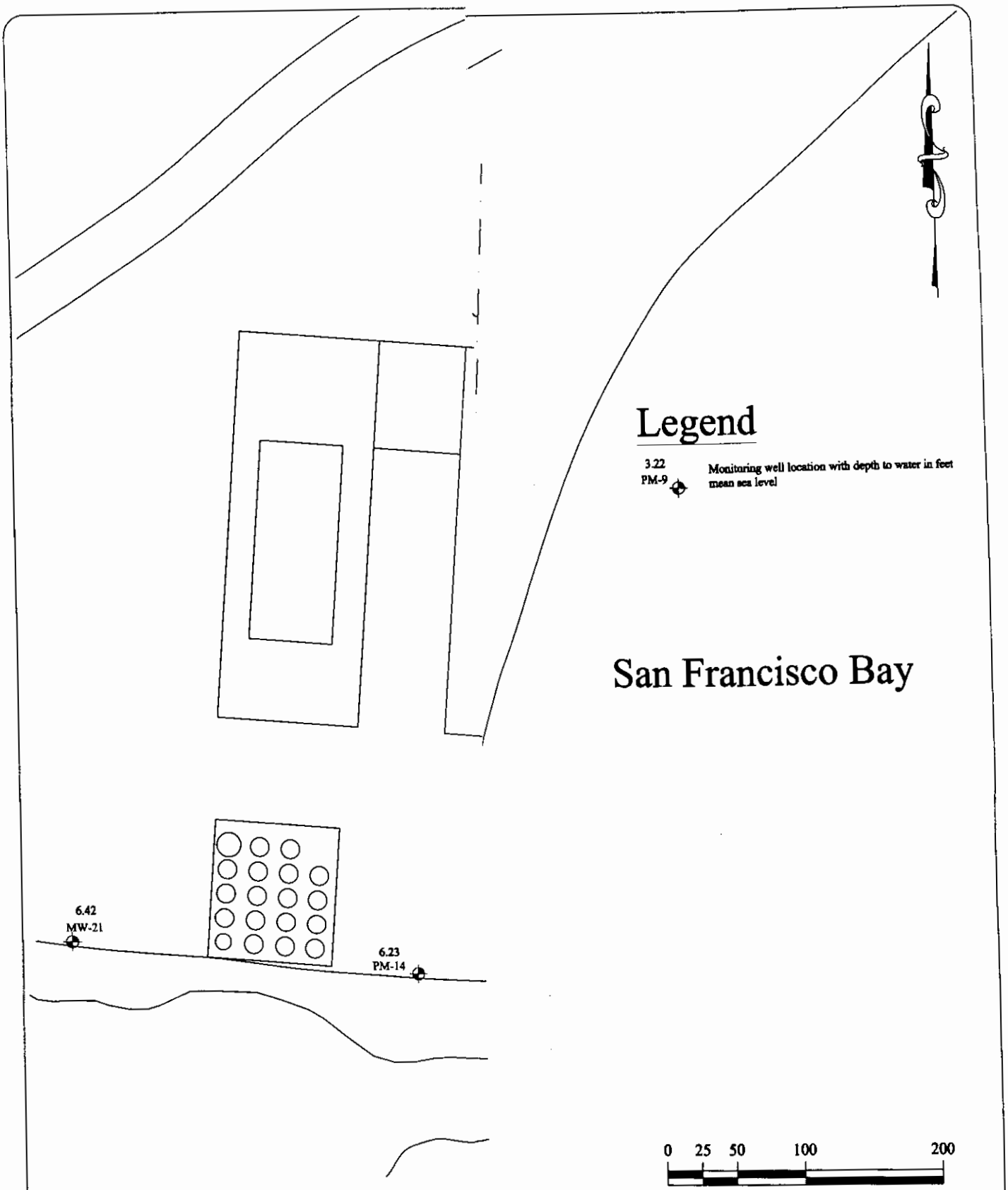
Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Concentrations in mg/L or Parts Per Million							
Well Number	**PM09 (Total)**				**PM09 (Dissolved)**		
Field Sample ID	PM09QM498	HA20QM498			PM09QM498F	HA20QM498F	
Sample Date	12/16/98				12/16/98		
Duplicate	No	Yes	RPD		No	Yes	RPD
Metals Analyses							
Antimony	0.00052	0.00047	10%		0.00045	<0.00002	93%
Arsenic	0.002	0.002	0%		0.001	0.001	0%
Beryllium	0.00006	0.00005	18%		0.00005	0.00005	0%
Cadmium	0.00023	0.00011	71%		0.00003	0.00004	29%
Chromium	0.01	0.01	0%		<0.005	<0.005	N/A
Copper	0.0023	0.0019	19%		0.0005	0.001	67%
Lead	0.0831	0.0688	19%		0.003	0.00314	5%
Mercury	<0.0002	<0.0002	N/A		<0.0002	<0.0002	N/A
Nickel	0.0078	0.0069	12%		0.0033	0.0034	3%
Selenium	<0.005	0.002	67%		<0.005	<0.005	N/A
Silver	0.00004	<0.00002	40%		<0.00002	<0.00002	N/A
Thallium	<0.00002	<0.00002	N/A		<0.00002	<0.00002	N/A
Zinc	0.0377	0.0308	20%		0.0087	0.029	108%
Min of Abs RPD			0%				0%
Max of Abs RPD			71%				108%

Concentrations in µg/L or Parts Per Billion			
Well Number	**PM-09**		
Field Sample ID	PM09QM498	HA20QM498	
Sample Date	12/16/98		
Duplicate	No	Yes	RPD
1,1,1-Trichloroethane	<2.5	<1	N/A
1,1,2,2-Tetrachloroethane	<2.5	<1	N/A
1,1-Dichloroethane	<2.5	<1	N/A
1,1-Dichloroethene	<2.5	<1	N/A
1,2-Dichloroethane	<2.5	<1	N/A
1,2-Dichloropropane	<2.5	<1	N/A
2-Butanone	<25	<10	N/A
2-Hexanone	<25	<10	N/A
4-Methyl-2-pentanone	<25	<10	N/A
Acetone	<100	<40	N/A
Benzene	89	81	9%
Bromodichloromethane	<2.5	<1	N/A
Bromoform	<2.5	<1	N/A
Bromomethane	<2.5	<1	N/A
Carbon Disulfide	<2.5	<1	N/A
Carbon Tetrachloride	<2.5	<1	N/A
Chlorobenzene	<2.5	<1	N/A
Chloroethane	<2.5	<1	N/A
Chloroform	<2.5	<1	N/A
Chloromethane	<2.5	<1	N/A
cis-1,2-Dichloroethene	<2.5	<1	N/A
cis-1,3-Dichloropropene	<2.5	<1	N/A
Dibromochloromethane	<2.5	<1	N/A
Ethylbenzene	14	13	7%
Methylene Chloride	<5	<2	N/A
Styrene	<2.5	<1	N/A
Tetrachloroethene	<2.5	<1	N/A
Toluene	<2.5	<1	N/A
trans-1,2-Dichloroethene	<2.5	<1	N/A
trans-1,3-Dichloropropene	<2.5	<1	N/A
Trichloroethene	<2.5	<1	N/A
Vinyl Acetate	<25	<10	N/A
Vinyl Chloride	<2.5	<1	N/A
Xylenes, Total	400	370	8%
Min of Abs RPD			7%
Max of Abs RPD			9%

Note:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs Absolute value
Dulicate analysis results of PM-09 samples for Semivolatile Organic Compounds were non-detect for all constituents and so do not support relative percent difference analysis
Dissolved samples were field filtered with a 5 micron filter
RPD Relative percent difference calculated as: (Primary Result-Duplicate Result)/(Mean of the both results) In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent detections where one compound was detected and one was not detected, and are included for comparison purposes only



No.	Date	Revision	Approved

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Figure
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Project

Appendix A

Laboratory Analytical Reports

Columbia Analytical Services INC.
An Employee-Owned Company

March 24, 1999

Service Request No.: S9900783

Mr. Mike Harrison
HENSHAW ASSOCIATES, INC.
607 Menlo Ave.
Menlo Park, CA 94025

RE: O'Brien/112-E.01

Dear Mr. Harrison:

The following pages contain analytical results for sample(s) received by the laboratory on March 10, 1999. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above. To help expedite our service, please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 43, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely,

Bernadette T. Cox

Bernadette T. Cox
Project Chemist

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Henshaw Associates, Inc.	**Service Request No.:**	K9901578
Project:	O'Brien/112-E.01	**Date Received:**	3/12/99
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP) and Matrix Spike (MS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

The Matrix Spike (MS) recovery of Arsenic for sample MW21QM199 was outside the normal CAS control limits because of suspected matrix interference The sample was re-analyzed by a different method at a 5X dilution, and again produced results outside normal control limits. The results of the 5X dilution are reported.

The Matrix Spike (MS) recovery of Beryllium for sample MW21QM199 was outside normal CAS control limits. No Beryllium was detected in the unspiked sample. The MS recovery for Beryllium was 2% below the normal CAS control limist and likely has no significance to the sample result. No further corrective action was taken.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw & Associates	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS) and Duplicate Matrix Spike (DMS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

COLUMBIA ANALYTICAL SERVICES, Inc.
Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM14QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Chloride	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	1	NA	3/12/99	ND	
Acrolein	NONE	8260	5	1	NA	3/12/99	ND	
Acetone	NONE	8260	20	1	NA	3/12/99	ND	
1,1-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Iodomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Disulfide	NONE	8260	0.5	1	NA	3/12/99	ND	
Methylene Chloride	NONE	8260	1	1	NA	3/12/99	ND	
Acrylonitrile	NONE	8260	5	1	NA	3/12/99	ND	
trans-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Acetate	NONE	8260	5	1	NA	3/12/99	ND	
2-Butanone (MEK)	NONE	8260	5	1	NA	3/12/99	ND	
2,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
cis-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroform	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Tetrachloride	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Benzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichloroethene (TCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromodichloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
2-Hexanone	NONE	8260	5	1	NA	3/12/99	ND	
cis-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Toluene	NONE	8260	0.5	1	NA	3/12/99	ND	
trans-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,2-Trichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: O'Brien/112-E.01
Sample Matrix: Water

Service Request: S9900783
Date Collected: 3/10/99
Date Received: 3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name: PM14QM199
Lab Code: S9900783-001
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	1	NA	3/12/99	ND	
1,3-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Tetrachloroethene (PCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromoethane (EDB)	NONE	8260	2	1	NA	3/12/99	ND	
Chlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Ethylbenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Total Xylenes	NONE	8260	0.5	1	NA	3/12/99	ND	
Styrene	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromoform	NONE	8260	0.5	1	NA	3/12/99	ND	
Isopropylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2,3-Trichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Propylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
2-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
4-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,3,5-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
tert-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
sec-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,3-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
4-Isopropyltoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,4-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,3-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
Naphthalene	NONE	8260	2	1	NA	3/12/99	ND	
Hexachlorobutadiene	NONE	8260	2	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-002	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Chloromethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Vinyl Chloride	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Bromomethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Chloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Acrolein	NONE	8260	5	5	NA	3/15/99	<25	
Acetone	NONE	8260	20	5	NA	3/15/99	<100	
1,1-Dichloroethene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Iodomethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Carbon Disulfide	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Methylene Chloride	NONE	8260	1	5	NA	3/15/99	<5	
Acrylonitrile	NONE	8260	5	5	NA	3/15/99	<25	
trans-1,2-Dichloroethene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,1-Dichloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Vinyl Acetate	NONE	8260	5	5	NA	3/15/99	<25	
2-Butanone (MEK)	NONE	8260	5	5	NA	3/15/99	<25	
2,2-Dichloropropane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
cis-1,2-Dichloroethene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Chloroform	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Bromochloromethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,1-Dichloropropene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Carbon Tetrachloride	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,2-Dichloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Benzene	NONE	8260	0.5	5	NA	3/15/99	89	
Trichloroethene (TCE)	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,2-Dichloropropane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Bromodichloromethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Dibromomethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
2-Hexanone	NONE	8260	5	5	NA	3/15/99	<25	
cis-1,3-Dichloropropene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Toluene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
trans-1,3-Dichloropropene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,1,2-Trichloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-002	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	5	NA	3/15/99	<25	
1,3-Dichloropropane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Tetrachloroethene (PCE)	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Dibromochloromethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,2-Dibromoethane (EDB)	NONE	8260	2	5	NA	3/15/99	<10	
Chlorobenzene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Ethylbenzene	NONE	8260	0.5	5	NA	3/15/99	14	
Total Xylenes	NONE	8260	0.5	5	NA	3/15/99	400	
Styrene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Bromoform	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Isopropylbenzene	NONE	8260	2	5	NA	3/15/99	39	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,2,3-Trichloropropane	NONE	8260	0.5	5	NA	3/15/99	<2.5	
Bromobenzene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
n-Propylbenzene	NONE	8260	2	5	NA	3/15/99	32	
2-Chlorotoluene	NONE	8260	2	5	NA	3/15/99	<10	
4-Chlorotoluene	NONE	8260	2	5	NA	3/15/99	<10	
1,3,5-Trimethylbenzene	NONE	8260	2	5	NA	3/15/99	12	
tert-Butylbenzene	NONE	8260	2	5	NA	3/15/99	<10	
1,2,4-Trimethylbenzene	NONE	8260	2	5	NA	3/15/99	18	
sec-Butylbenzene	NONE	8260	2	5	NA	3/15/99	<10	
1,3-Dichlorobenzene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
4-Isopropyltoluene	NONE	8260	2	5	NA	3/15/99	<10	
1,4-Dichlorobenzene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
n-Butylbenzene	NONE	8260	2	5	NA	3/15/99	<10	
1,2-Dichlorobenzene	NONE	8260	0.5	5	NA	3/15/99	<2.5	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	5	NA	3/15/99	<10	
1,2,4-Trichlorobenzene	NONE	8260	2	5	NA	3/15/99	<10	
1,2,3-Trichlorobenzene	NONE	8260	2	5	NA	3/15/99	<10	
Naphthalene	NONE	8260	2	5	NA	3/15/99	<10	
Hexachlorobutadiene	NONE	8260	2	5	NA	3/15/99	<10	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Vinyl Chloride	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	1	NA	3/15/99	ND	
Acrolein	NONE	8260	5	1	NA	3/15/99	ND	
Acetone	NONE	8260	20	1	NA	3/15/99	ND	
1,1-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
Iodomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Carbon Disulfide	NONE	8260	0.5	1	NA	3/15/99	ND	
Methylene Chloride	NONE	8260	1	1	NA	3/15/99	ND	
Acrylonitrile	NONE	8260	5	1	NA	3/15/99	ND	
trans-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1-Dichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Vinyl Acetate	NONE	8260	5	1	NA	3/15/99	ND	
2-Butanone (MEK)	NONE	8260	5	1	NA	3/15/99	ND	
2,2-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
cis-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloroform	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromochloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
Carbon Tetrachloride	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Benzene	NONE	8260	0.5	1	NA	3/15/99	ND	
Trichloroethene (TCE)	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromodichloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Dibromomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
2-Hexanone	NONE	8260	5	1	NA	3/15/99	ND	
cis-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
Toluene	NONE	8260	0.5	1	NA	3/15/99	ND	
trans-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,2-Trichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	1	NA	3/15/99	ND	
1,3-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Tetrachloroethene (PCE)	NONE	8260	0.5	1	NA	3/15/99	ND	
Dibromochloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dibromoethane (EDB)	NONE	8260	2	1	NA	3/15/99	ND	
Chlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Ethylbenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
Total Xylenes	NONE	8260	0.5	1	NA	3/15/99	ND	
Styrene	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromoform	NONE	8260	0.5	1	NA	3/15/99	ND	
Isopropylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2,3-Trichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
n-Propylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
2-Chlorotoluene	NONE	8260	2	1	NA	3/15/99	ND	
4-Chlorotoluene	NONE	8260	2	1	NA	3/15/99	ND	
1,3,5-Trimethylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
tert-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2,4-Trimethylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
sec-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,3-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
4-Isopropyltoluene	NONE	8260	2	1	NA	3/15/99	ND	
1,4-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
n-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	1	NA	3/15/99	ND	
1,2,4-Trichlorobenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2,3-Trichlorobenzene	NONE	8260	2	1	NA	3/15/99	ND	
Naphthalene	NONE	8260	2	1	NA	3/15/99	ND	
Hexachlorobutadiene	NONE	8260	2	1	NA	3/15/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-004	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	2	NA	3/15/99	<1	
Chloromethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Vinyl Chloride	NONE	8260	0.5	2	NA	3/15/99	<1	
Bromomethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Chloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	2	NA	3/15/99	<1	
Acrolein	NONE	8260	5	2	NA	3/15/99	<10	
Acetone	NONE	8260	20	2	NA	3/15/99	<40	
1,1-Dichloroethene	NONE	8260	0.5	2	NA	3/15/99	<1	
Iodomethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Carbon Disulfide	NONE	8260	0.5	2	NA	3/15/99	<1	
Methylene Chloride	NONE	8260	1	2	NA	3/15/99	<2	
Acrylonitrile	NONE	8260	5	2	NA	3/15/99	<10	
trans-1,2-Dichloroethene	NONE	8260	0.5	2	NA	3/15/99	<1	
1,1-Dichloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Vinyl Acetate	NONE	8260	5	2	NA	3/15/99	<10	
2-Butanone (MEK)	NONE	8260	5	2	NA	3/15/99	<10	
2,2-Dichloropropane	NONE	8260	0.5	2	NA	3/15/99	<1	
cis-1,2-Dichloroethene	NONE	8260	0.5	2	NA	3/15/99	<1	
Chloroform	NONE	8260	0.5	2	NA	3/15/99	<1	
Bromochloromethane	NONE	8260	0.5	2	NA	3/15/99	<1	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	2	NA	3/15/99	<1	
1,1-Dichloropropene	NONE	8260	0.5	2	NA	3/15/99	<1	
Carbon Tetrachloride	NONE	8260	0.5	2	NA	3/15/99	<1	
1,2-Dichloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Benzene	NONE	8260	0.5	2	NA	3/15/99	81	
Trichloroethene (TCE)	NONE	8260	0.5	2	NA	3/15/99	<1	
1,2-Dichloropropane	NONE	8260	0.5	2	NA	3/15/99	<1	
Bromodichloromethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Dibromomethane	NONE	8260	0.5	2	NA	3/15/99	<1	
2-Hexanone	NONE	8260	5	2	NA	3/15/99	<10	
cis-1,3-Dichloropropene	NONE	8260	0.5	2	NA	3/15/99	<1	
Toluene	NONE	8260	0.5	2	NA	3/15/99	<1	
trans-1,3-Dichloropropene	NONE	8260	0.5	2	NA	3/15/99	<1	
1,1,2-Trichloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	HA20QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-004	Basis:	NA
Test Notes:	C1		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	2	NA	3/15/99	<10	
1,3-Dichloropropane	NONE	8260	0.5	2	NA	3/15/99	<1	
Tetrachloroethene (PCE)	NONE	8260	0.5	2	NA	3/15/99	<1	
Dibromochloromethane	NONE	8260	0.5	2	NA	3/15/99	<1	
1,2-Dibromoethane (EDB)	NONE	8260	2	2	NA	3/15/99	<4	
Chlorobenzene	NONE	8260	0.5	2	NA	3/15/99	<1	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	
Ethylbenzene	NONE	8260	0.5	2	NA	3/15/99	13	
Total Xylenes	NONE	8260	0.5	2	NA	3/15/99	370	
Styrene	NONE	8260	0.5	2	NA	3/15/99	<1	
Bromoform	NONE	8260	0.5	2	NA	3/15/99	<1	
Isopropylbenzene	NONE	8260	2	2	NA	3/15/99	35	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	2	NA	3/15/99	<1	
1,2,3-Trichloropropane	NONE	8260	0.5	2	NA	3/15/99	<1	
Bromobenzene	NONE	8260	0.5	2	NA	3/15/99	<1	
n-Propylbenzene	NONE	8260	2	2	NA	3/15/99	28	
2-Chlorotoluene	NONE	8260	2	2	NA	3/15/99	<4	
4-Chlorotoluene	NONE	8260	2	2	NA	3/15/99	<4	
1,3,5-Trimethylbenzene	NONE	8260	2	2	NA	3/15/99	10	
tert-Butylbenzene	NONE	8260	2	2	NA	3/15/99	<4	
1,2,4-Trimethylbenzene	NONE	8260	2	2	NA	3/15/99	17	
sec-Butylbenzene	NONE	8260	2	2	NA	3/15/99	6	
1,3-Dichlorobenzene	NONE	8260	0.5	2	NA	3/15/99	<1	
4-Isopropyltoluene	NONE	8260	2	2	NA	3/15/99	<4	
1,4-Dichlorobenzene	NONE	8260	0.5	2	NA	3/15/99	<1	
n-Butylbenzene	NONE	8260	2	2	NA	3/15/99	<4	
1,2-Dichlorobenzene	NONE	8260	0.5	2	NA	3/15/99	2	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	2	NA	3/15/99	<4	
1,2,4-Trichlorobenzene	NONE	8260	2	2	NA	3/15/99	<4	
1,2,3-Trichlorobenzene	NONE	8260	2	2	NA	3/15/99	<4	
Naphthalene	NONE	8260	2	2	NA	3/15/99	<4	
Hexachlorobutadiene	NONE	8260	2	2	NA	3/15/99	<4	

C1 The MRL was elevated due to high analyte concentration requiring sample dilution.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	TB1	Units:	ug/L (ppb)
Lab Code:	S9900783-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Chloride	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	1	NA	3/12/99	ND	
Acrolein	NONE	8260	5	1	NA	3/12/99	ND	
Acetone	NONE	8260	20	1	NA	3/12/99	ND	
1,1-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Iodomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Disulfide	NONE	8260	0.5	1	NA	3/12/99	ND	
Methylene Chloride	NONE	8260	1	1	NA	3/12/99	ND	
Acrylonitrile	NONE	8260	5	1	NA	3/12/99	ND	
trans-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Acetate	NONE	8260	5	1	NA	3/12/99	ND	
2-Butanone (MEK)	NONE	8260	5	1	NA	3/12/99	ND	
2,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
cis-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroform	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Tetrachloride	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Benzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichloroethene (TCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromodichloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
2-Hexanone	NONE	8260	5	1	NA	3/12/99	ND	
cis-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Toluene	NONE	8260	0.5	1	NA	3/12/99	ND	
trans-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,2-Trichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

EPA Method 8260
Volatile Organic Compounds

Sample Name:	TB1	Units:	ug/L (ppb)
Lab Code:	S9900783-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	1	NA	3/12/99	ND	
1,3-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Tetrachloroethene (PCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromoethane (EDB)	NONE	8260	2	1	NA	3/12/99	ND	
Chlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Ethylbenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Total Xylenes	NONE	8260	0.5	1	NA	3/12/99	ND	
Styrene	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromoform	NONE	8260	0.5	1	NA	3/12/99	ND	
Isopropylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2,3-Trichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Propylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
2-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
4-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,3,5-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
tert-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
sec-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,3-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
4-Isopropyltoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,4-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,3-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
Naphthalene	NONE	8260	2	1	NA	3/12/99	ND	
Hexachlorobutadiene	NONE	8260	2	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990312-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Chloride	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	1	NA	3/12/99	ND	
Acrolein	NONE	8260	5	1	NA	3/12/99	ND	
Acetone	NONE	8260	20	1	NA	3/12/99	ND	
1,1-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Iodomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Disulfide	NONE	8260	0.5	1	NA	3/12/99	ND	
Methylene Chloride	NONE	8260	1	1	NA	3/12/99	ND	
Acrylonitrile	NONE	8260	5	1	NA	3/12/99	ND	
trans-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Vinyl Acetate	NONE	8260	5	1	NA	3/12/99	ND	
2-Butanone (MEK)	NONE	8260	5	1	NA	3/12/99	ND	
2,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
cis-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/12/99	ND	
Chloroform	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Carbon Tetrachloride	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Benzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Trichloroethene (TCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromodichloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromomethane	NONE	8260	0.5	1	NA	3/12/99	ND	
2-Hexanone	NONE	8260	5	1	NA	3/12/99	ND	
cis-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
Toluene	NONE	8260	0.5	1	NA	3/12/99	ND	
trans-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,2-Trichloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990312-WB2	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	1	NA	3/12/99	ND	
1,3-Dichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Tetrachloroethene (PCE)	NONE	8260	0.5	1	NA	3/12/99	ND	
Dibromochloromethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromoethane (EDB)	NONE	8260	2	1	NA	3/12/99	ND	
Chlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
Ethylbenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
Total Xylenes	NONE	8260	0.5	1	NA	3/12/99	ND	
Styrene	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromoform	NONE	8260	0.5	1	NA	3/12/99	ND	
Isopropylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2,3-Trichloropropane	NONE	8260	0.5	1	NA	3/12/99	ND	
Bromobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Propylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
2-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
4-Chlorotoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,3,5-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
tert-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trimethylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
sec-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,3-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
4-Isopropyltoluene	NONE	8260	2	1	NA	3/12/99	ND	
1,4-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
n-Butylbenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2-Dichlorobenzene	NONE	8260	0.5	1	NA	3/12/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	1	NA	3/12/99	ND	
1,2,4-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
1,2,3-Trichlorobenzene	NONE	8260	2	1	NA	3/12/99	ND	
Naphthalene	NONE	8260	2	1	NA	3/12/99	ND	
Hexachlorobutadiene	NONE	8260	2	1	NA	3/12/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990315-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Vinyl Chloride	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Trichlorofluoromethane (CFC 11)	NONE	8260	0.5	1	NA	3/15/99	ND	
Acrolein	NONE	8260	5	1	NA	3/15/99	ND	
Acetone	NONE	8260	20	1	NA	3/15/99	ND	
1,1-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
Iodomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Carbon Disulfide	NONE	8260	0.5	1	NA	3/15/99	ND	
Methylene Chloride	NONE	8260	1	1	NA	3/15/99	ND	
Acrylonitrile	NONE	8260	5	1	NA	3/15/99	ND	
trans-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1-Dichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Vinyl Acetate	NONE	8260	5	1	NA	3/15/99	ND	
2-Butanone (MEK)	NONE	8260	5	1	NA	3/15/99	ND	
2,2-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
cis-1,2-Dichloroethene	NONE	8260	0.5	1	NA	3/15/99	ND	
Chloroform	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromochloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,1-Trichloroethane (TCA)	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
Carbon Tetrachloride	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Benzene	NONE	8260	0.5	1	NA	3/15/99	ND	
Trichloroethene (TCE)	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromodichloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Dibromomethane	NONE	8260	0.5	1	NA	3/15/99	ND	
2-Hexanone	NONE	8260	5	1	NA	3/15/99	ND	
cis-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
Toluene	NONE	8260	0.5	1	NA	3/15/99	ND	
trans-1,3-Dichloropropene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,2-Trichloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

EPA Method 8260
Volatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990315-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
4-Methyl-2-pentanone (MIBK)	NONE	8260	5	1	NA	3/15/99	ND	
1,3-Dichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Tetrachloroethene (PCE)	NONE	8260	0.5	1	NA	3/15/99	ND	
Dibromochloromethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dibromoethane (EDB)	NONE	8260	2	1	NA	3/15/99	ND	
Chlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,1,1,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
Ethylbenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
Total Xylenes	NONE	8260	0.5	1	NA	3/15/99	ND	
Styrene	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromoform	NONE	8260	0.5	1	NA	3/15/99	ND	
Isopropylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,1,2,2-Tetrachloroethane	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2,3-Trichloropropane	NONE	8260	0.5	1	NA	3/15/99	ND	
Bromobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
n-Propylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
2-Chlorotoluene	NONE	8260	2	1	NA	3/15/99	ND	
4-Chlorotoluene	NONE	8260	2	1	NA	3/15/99	ND	
1,3,5-Trimethylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
tert-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2,4-Trimethylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
sec-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,3-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
4-Isopropyltoluene	NONE	8260	2	1	NA	3/15/99	ND	
1,4-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
n-Butylbenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2-Dichlorobenzene	NONE	8260	0.5	1	NA	3/15/99	ND	
1,2-Dibromo-3-chloropropane (DBCP)	NONE	8260	2	1	NA	3/15/99	ND	
1,2,4-Trichlorobenzene	NONE	8260	2	1	NA	3/15/99	ND	
1,2,3-Trichlorobenzene	NONE	8260	2	1	NA	3/15/99	ND	
Naphthalene	NONE	8260	2	1	NA	3/15/99	ND	
Hexachlorobutadiene	NONE	8260	2	1	NA	3/15/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Total Metals

Sample Name:	PM14QM199	Units:	ug/L (ppb)
Lab Code:	K9901578-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.13	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	5	
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.02	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.23	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	8	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	1.3	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	1.27	
Mercury	7470A	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	11.3	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.04	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	17.9	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Total Metals

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	K9901578-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.52	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	2	J
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.06	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.23	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	10	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	2.3	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	83.1	
Mercury	7470A	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	7.8	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.04	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	37.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Total Metals

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	K9901578-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	16.0	
Arsenic	CLFAA	7060A	5	1	5	3/17/99	3/18/99	68	
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	1.3	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	3.58	
Mercury	7470A	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	7.1	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	11.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Total Metals

Sample Name:	HA20QM199	Units:	ug/L (ppb)
Lab Code:	K9901578-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.47	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	2	J
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.11	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	10	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	1.9	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	68.8	
Mercury	7470A	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	6.9	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	2	J
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	30.8	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Total Metals

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	K9901578-MB	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	ND	
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	ND	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	ND	
Mercury	7470A	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	ND	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Dissolved Metals

Sample Name:	PM14QM199F	Units:	ug/L (ppb)
Lab Code:	K9901578-005	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.11	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	2	J
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.02	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	0.9	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	0.22	
Mercury	CLFAA	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	5.2	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.04	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	14.3	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Dissolved Metals

Sample Name:	PM09QM199F	Units:	ug/L (ppb)
Lab Code:	K9901578-006	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.45	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	1	J
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.03	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	0.5	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	3.00	
Mercury	CLFAA	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	3.3	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	8.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Dissolved Metals

Sample Name:	MW21QM199F	Units:	ug/L (ppb)
Lab Code:	K9901578-007	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	15.8	
Arsenic	CLFAA	7060A	5	1	5	3/17/99	3/18/99	74	
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.02	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	1.8	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	0.53	
Mercury	CLFAA	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	6.5	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.03	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	28.6	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Dissolved Metals

Sample Name:	HA20QM199F	Units:	ug/L (ppb)
Lab Code:	K9901578-008	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Antimony	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Arsenic	CLFAA	7060A	5	1	1	3/17/99	3/18/99	1	J
Beryllium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.05	
Cadmium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	0.04	
Chromium	CLAA	6010B	5	4	1	3/17/99	3/17/99	ND	
Copper	CLFAA	200.8	0.1	0.05	1	3/17/99	3/17/99	1.0	
Lead	CLFAA	200.8	0.02	0.007	1	3/17/99	3/17/99	3.14	
Mercury	CLFAA	7470A	0.2	0.1	1	3/15/99	3/16/99	ND	
Nickel	CLFAA	200.8	0.2	0.05	1	3/17/99	3/17/99	3.4	
Selenium	CLFAA	7740	5	2	1	3/17/99	3/17/99	ND	
Silver	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Thallium	CLFAA	200.8	0.02	0.02	1	3/17/99	3/17/99	ND	
Zinc	CLFAA	200.8	0.5	0.08	1	3/17/99	3/17/99	29.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Aniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Phenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,3-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,4-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,2-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzyl Alcohol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachloroethane	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3- and 4-Methylphenol*	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Nitrobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Isophorone	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitrophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dimethylphenol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dichlorophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Benzoic Acid	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Naphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chloroaniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobutadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylnaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorocyclopentadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
2,4,6-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4,5-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chloronaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Acenaphthylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dimethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,6-Dinitrotoluene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Acenaphthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2,4-Dinitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Dibenzofuran	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
2,4-Dinitrotoluene	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Fluorene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM14QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
N-Nitrosodiphenylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pentachlorophenol	EPA 3510	8270C	30	1	3/12/99	3/16/99	ND	
Phenanthrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-butyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Butyl Benzyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3,3'-Dichlorobenzidine	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Benz(a)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Chrysene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-octyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(b)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(k)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(a)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dibenz(a,h)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(g,h,i)perylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Aniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Phenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,3-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,4-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,2-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzyl Alcohol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachloroethane	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3- and 4-Methylphenol*	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Nitrobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Isophorone	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitrophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dimethylphenol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dichlorophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Benzoic Acid	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Naphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chloroaniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobutadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylnaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorocyclopentadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
2,4,6-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4,5-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chloronaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Acenaphthylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dimethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,6-Dinitrotoluene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Acenaphthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2,4-Dinitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Dibenzofuran	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
2,4-Dinitrotoluene	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Fluorene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-002	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
N-Nitrosodiphenylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pentachlorophenol	EPA 3510	8270C	30	1	3/12/99	3/16/99	ND	
Phenanthrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-butyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Butyl Benzyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3,3'-Dichlorobenzidine	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Benz(a)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Chrysene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-octyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(b)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(k)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(a)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dibenz(a,h)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(g,h,i)perylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Aniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Phenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,3-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,4-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,2-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzyl Alcohol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachloroethane	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3- and 4-Methylphenol*	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Nitrobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Isophorone	EPA 3510	8270C	5	1	3/12/99	3/16/99	30	
2-Nitrophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dimethylphenol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dichlorophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Benzoic Acid	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Naphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chloroaniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobutadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylnaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorocyclopentadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
2,4,6-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4,5-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chloronaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Acenaphthylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dimethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,6-Dinitrotoluene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Acenaphthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2,4-Dinitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Dibenzofuran	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
2,4-Dinitrotoluene	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Fluorene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-003	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
N-Nitrosodiphenylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pentachlorophenol	EPA 3510	8270C	30	1	3/12/99	3/16/99	ND	
Phenanthrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-butyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Butyl Benzyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3,3'-Dichlorobenzidine	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Benz(a)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Chrysene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-octyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(b)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(k)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(a)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dibenz(a,h)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(g,h,i)perylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Aniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Phenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,3-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,4-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,2-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzyl Alcohol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachloroethane	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3- and 4-Methylphenol*	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Nitrobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Isophorone	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitrophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dimethylphenol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dichlorophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Benzoic Acid	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Naphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chloroaniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobutadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylnaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorocyclopentadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
2,4,6-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4,5-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chloronaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Acenaphthylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dimethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,6-Dinitrotoluene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Acenaphthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2,4-Dinitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Dibenzofuran	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
2,4-Dinitrotoluene	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Fluorene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/10/99

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	HA20QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-004	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
N-Nitrosodiphenylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pentachlorophenol	EPA 3510	8270C	30	1	3/12/99	3/16/99	ND	
Phenanthrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-butyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Butyl Benzyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3,3'-Dichlorobenzidine	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Benz(a)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Chrysene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-octyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(b)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(k)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(a)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dibenz(a,h)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(g,h,i)perylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990312-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Aniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-chloroethyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Phenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,3-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,4-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
1,2-Dichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzyl Alcohol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroisopropyl) Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachloroethane	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3- and 4-Methylphenol*	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Nitrobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Isophorone	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitrophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dimethylphenol	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
Bis(2-chloroethoxy)methane	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4-Dichlorophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Benzoic Acid	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Naphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chloroaniline	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobutadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Methylnaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorocyclopentadiene	EPA 3510	8270C	10	1	3/12/99	3/16/99	ND	
2,4,6-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,4,5-Trichlorophenol	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Chloronaphthalene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Acenaphthylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dimethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
2,6-Dinitrotoluene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Acenaphthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2,4-Dinitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Dibenzofuran	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitrophenol	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
2,4-Dinitrotoluene	EPA 3510	8270C	50	1	3/12/99	3/16/99	ND	
Fluorene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Chlorophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	S990312-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Diethyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Nitroaniline	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
2-Methyl-4,6-dinitrophenol	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
N-Nitrosodiphenylamine	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
4-Bromophenyl Phenyl Ether	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Hexachlorobenzene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pentachlorophenol	EPA 3510	8270C	30	1	3/12/99	3/16/99	ND	
Phenanthrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-butyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Butyl Benzyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
3,3'-Dichlorobenzidine	EPA 3510	8270C	20	1	3/12/99	3/16/99	ND	
Benz(a)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Chrysene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Bis(2-ethylhexyl) Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Di-n-octyl Phthalate	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(b)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(k)fluoranthene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(a)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Indeno(1,2,3-cd)pyrene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Dibenz(a,h)anthracene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	
Benzo(g,h,i)perylene	EPA 3510	8270C	5	1	3/12/99	3/16/99	ND	

* Quantified as 4-methylphenol.

APPENDIX A

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	NA

Surrogate Recovery Summary
Volatile Organic Compounds

Prep Method:	NONE	Units:	PERCENT
Analysis Method:	8260	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery		
			Dibromofluoromethane	Toluene-D8	4-Bromofluorobenzene
PM14QM199	S9900783-001		95	103	97
PM09QM199	S9900783-002		94	102	106
MW21QM199	S9900783-003		94	103	101
HA20QM199	S9900783-004		94	102	106
TB1	S9900783-005		95	103	97
PM09QM199	S9900783-002MS		97	103	105
PM09QM199	S9900783-002DMS		96	102	104
Method Blank	S990312-WB2		95	103	98
Method Blank	S990315-WB1		94	104	97
EPA Acceptance Limits:			86-118	88-110	86-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	3/15/99

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	PM09QM199	Units:	ug/L (ppb)
Lab Code:	S9900783-002MS, S9900783-002DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
1,1-Dichloroethene	NONE	8260	0.5	50	50	ND	43	43	86	86	62-145	<1	
Benzene	NONE	8260	0.5	50	50	89	130	130	82	82	77-127	<1	
Trichloroethene	NONE	8260	0.5	50	50	ND	49	50	98	100	71-119	2	
Toluene	NONE	8260	0.5	50	50	ND	50	51	100	102	76-124	2	
Chlorobenzene	NONE	8260	0.5	50	50	ND	47	49	94	98	75-127	4	
1,2-Dichlorobenzene	NONE	8260	0.5	50	50	ND	46	48	92	96	74-126	4	
Naphthalene	NONE	8260	2	50	50	ND	59	78	118	156	43-157	28	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Henshaw Associates, Inc.
Project: O'Brien/112-E.01
Sample Matrix: Water

Service Request: K9901578
Date Collected: 3/10/99
Date Received: 3/12/99
Date Extracted: 3/17/99
Date Analyzed: 3/17/99

Duplicate Summary
Total Metals

Sample Name: PM09QM199
Lab Code: K9901578-002DUP
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Antimony	CLFAA	200.8	0.02	0.52	0.54	0.53	4	
Arsenic	CLFAA	7060A	5	2	2	2	<1	
Beryllium	CLFAA	200.8	0.02	0.06	0.07	0.06	17	
Cadmium	CLFAA	200.8	0.02	0.23	0.20	0.22	14	
Chromium	CLAA	6010B	5	8	9	8	12	L
Copper	CLFAA	200.8	0.1	2.3	2.5	2.4	8	
Lead	CLFAA	200.8	0.02	83.1	88.2	85.6	6	
Mercury	7470A	7470A	0.2	ND	0.1	NC	NC	L,J
Nickel	CLFAA	200.8	0.2	7.8	8.0	7.9	3	
Selenium	CLFAA	7740	5	ND	2	NC	NC	J
Silver	CLFAA	200.8	0.02	0.04	ND	NC	NC	
Thallium	CLFAA	200.8	0.02	ND	ND	ND	-	
Zinc	CLFAA	200.8	0.5	37.7	36.7	37.2	3	

L Duplicate analysis was performed on Sample PM14QM199; Lab Code K9901578-001.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	K9901578
Project:	O'Brien/112-E.01	**Date Collected:**	3/10/99
Sample Matrix:	Water	**Date Received:**	3/12/99
		Date Extracted:	3/17/99
		Date Analyzed:	3/17/99

Matrix Spike Summary
Total Metals

Sample Name:	MW21QM199	Units:	ug/L (ppb)
Lab Code:	K9901578-003MS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Antimony	CLFAA	200.8	0.02	20	16.0	36.2	101	75-125	
Arsenic	CLFAA	7060A	5	20	68	82	70	75-125	A
Beryllium	CLFAA	200.8	0.02	20	ND	14.6	73	75-125	A
Cadmium	CLFAA	200.8	0.02	20	0.05	18.6	93	75-125	
Chromium	CLAA	6010B	5	200	8	202	97	75-125	M
Copper	CLFAA	200.8	0.1	20	1.3	16.6	77	75-125	
Lead	CLFAA	200.8	0.02	20	3.58	21.7	91	75-125	
Mercury	7470A	7470A	0.2	1.0	ND	1.0	100	75-125	M
Nickel	CLFAA	200.8	0.2	20	7.1	22.2	76	75-125	
Selenium	CLFAA	7740	5	20	ND	12	60	60-130	
Silver	CLFAA	200.8	0.02	20	0.05	16.9	84	75-125	
Thallium	CLFAA	200.8	0.02	20	ND	18.1	90	75-125	
Zinc	CLFAA	200.8	0.5	20	11.0	26.5	78	75-125	

A	Outside acceptance limits; see case narrative.
M	Matrix Spike analysis was performed on Sample PM14QM199; Lab Code K9901578-001.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	NA

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds

Prep Method:	EPA 3510	Units:	PERCENT
Analysis Method:	8270C	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery 2FP	PHL	NBZ	FBP	TBP	TPH
PM14QM199	S9900783-001		26	13	51	57	64	54
PM09QM199	S9900783-002		26	14	49	54	69	62
MW21QM199	S9900783-003		22	12	46	51	67	58
HA20QM199	S9900783-004		25	13	51	54	68	71
BATCH QC	S9900768-0010MS		26	14	54	56	65	52
BATCH QC	S9900768-0010DMS		21	15	44	61	71	55
Method Blank	S990312-WB1		24	13	48	49	62	60
CAS Acceptance Limits:			21-100	10-94	35-114	43-116	10-123	33-141

2FP	2-Fluorophenol
PHL	Phenol-D6
NBZ	Nitrobenzene-D5
FBP	2-Fluorobiphenyl
TBP	2,4,6-Tribromophenol
TPH	Terphenyl-D14

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Henshaw Associates, Inc.	**Service Request:**	S9900783
Project:	O'Brien/112-E.01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	3/12/99
		Date Analyzed:	3/17/99

Matrix Spike/Duplicate Matrix Spike Summary
Base Neutral/Acid Semivolatile Organic Compounds

Sample Name:	BATCH QC	Units:	ug/L (ppb)
Lab Code:	S9900768-0010MS, S9900768-0010DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Phenol	EPA 3510	8270C	5	100	100	ND	13	15	13	15	12-89	14	
2-Chlorophenol	EPA 3510	8270C	5	100	100	ND	46	48	46	48	27-123	4	
1,4-Dichlorobenzene	EPA 3510	8270C	5	50	50	ND	31	32	62	64	36-97	3	
N-Nitrosodi-n-propylamine	EPA 3510	8270C	5	50	50	ND	29	24	58	48	41-116	19	
1,2,4-Trichlorobenzene	EPA 3510	8270C	5	50	50	ND	31	32	62	64	39-98	3	
4-Chloro-3-methylphenol	EPA 3510	8270C	5	100	100	ND	58	58	58	58	23-97	<1	
Acenaphthene	EPA 3510	8270C	5	50	50	ND	35	38	70	76	46-118	8	
4-Nitrophenol	EPA 3510	8270C	50	100	100	ND	22	24	22	24	10-80	9	
2,4-Dinitrotoluene	EPA 3510	8270C	50	50	50	ND	33	34	66	68	24-96	3	
Pentachlorophenol	EPA 3510	8270C	30	100	100	ND	73	77	73	77	9-103	5	
Pyrene	EPA 3510	8270C	5	50	50	ND	31	35	62	70	26-127	12	

Columbia Analytical Services INC.
An Employee-Owned Company
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

SERVICE REQUEST NO. S9900783 P.O.# _____ PAGE 1 OF 2

PROJECT NAME O'BRIEN # 112.E.01
PROJECT MGR. MIKE HARRISON
COMPANY HENSHAW ASSOCIATES
ADDRESS 11875 DUBLIN BLVD
SUITE A-200 PHONE 925-551-7272
FAX _____
SAMPLER'S SIGNATURE [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☒ (PRESERVATIVE)	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐ (HCl)	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐ (HCl)	TPH as Diesel ☐ HBHC ☐ (HCl)	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐ (NP)	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐ (NP)	TRPH - 418.1 ☐ Oil and Grease Method (NP)	Metals Indicate below Total ☒ Dissolved ☐ PPM (HCl)	pH, Cond, Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle) (HNO_3)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle) (NP)	Cyanide (H_2SO_4)	BTZ 03/12/99 (8270 per client) SVOC 03/11/99 (NaOH)	DISSOLVED METALS PPM					REMARKS*
PM14QM199	3/10/99	10:35		WATER	2	X																	
PM14QM199	3/10/99	10:35	1	"	2												X						PRIORITY (PPM) METALS
PM14QM199	3/10/99	10:35		"	1								X										
PM14QM199F	3/10/99	10:35	6	"	1													X					FIELD FILTERED (PPM)
PM09QM199		12:00			2	X																	
PM09QM199		12:00	2		2												X						
PM09QM199		12:00			1								X										PPM - PRIORITY POLLUTANT METALS
PM09QM199F		12:00	7		1													X					FIELD FILTERED (PPM)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature [signature]	Signature Brian Fuller	Signature	Signature
Printed Name KRIS LARSON	Printed Name Brian Fuller	Printed Name	Printed Name
Firm HENSHAW	Firm CAS	Firm	Firm
Date/Time 3/10/99 1502	Date/Time 3/10/99 15:02	Date/Time	Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS: DUE: 3/17/99 R11D2 R9D3

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn As Pb Se Tl Hg

Shipped Via/Tracking # _____

Storage: _____

*Will sample results be used in connection with drinking water regulations? ☐ Yes ☐ No If yes, you must so indicate by writing "DW" for each such sample.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services INC.
An Employee-Owned Company
3334 Victor Court • Santa Clara, CA 95054
(408) 748-9700 • FAX (408) 748-9860

SERVICE REQUEST NO. S9900783 P.O.# _____ PAGE 2 OF 2

PROJECT NAME OBRIEN # 112E.01
PROJECT MGR. MIKE HARRISON
COMPANY HOWSTAW
ADDRESS 11875 DUBLIN BLVD STE A-200
PHONE 925-551-7272
FAX _____
SAMPLER'S SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	HCl	HCl	HCl	NP	NP	NP	HCl	HNO_3	NP	H_2SO_4	NaOH							REMARKS
						Volatile Organics BY GCMS 624 ☐ 8240 ☐ 8260 ☐	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐ 8021 ☐	TPH as Gas/BTEX ☐ TPH as Gas/BTEX/MTBE ☐	TPH as Diesel ☐ HBHC ☐	Base/Neu/Acid Organics / GCMS 625 ☐ 8270 ☐	Pesticides & PCBs 608/8082 ☐ Pesticides only 8081 ☐ PCBs 8082 ☐	TRPH - 418.1 ☐ Oil and Grease Method	Metals Indicate below Total ☐ Dissolved ☐ PPM	pH, Cond. Cl, SO_4, F, TDS, TSS Alk, NO_3, NO_2 (circle)	NH_3-N, COD, Total-P, TKN, TOC NO_3 / NO_2, Phenols (circle)	Cyanide	SVOC (8270)	DISSOLVED METALS (PPM)						
MW21QM199	3/10/99	1305		WATER	2	X																		
MW71QM199		1305	3		2	X										X								
MW71QM199		1305			1							X												PPM (PRIORITY POLLUTANT METALS)
MW71QM199F		1305	8		1												X							FIELD FILTERED (PPM)
HA20QM199		12:05			2	X																		
HA20QM199		12:05	4		2											X								
HA20QM199		12:05			1							X												PRIORITY POLLUTANT METALS (PPM)
HA20QM199F		12:05	9		1												X							FIELD FILTERED (PPM)
TB1			5		2	X																		
[redacted]																								

RELINQUISHED BY:
Signature _____
Printed Name MIKE HARRISON
Firm HOWSTAW
Date/Time 3/10 15:02

RECEIVED BY:
Signature _____
Printed Name Brian Fuller
Firm CAS
Date/Time 3/10/99 15:02

RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 3 day
___ 5 day ___ Other
X Standard (10 working days)
Results Due _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes MS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ MDLs/PQLs/Trace #
___ Electronic Data Deliverables

RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

Shipped Via/Tracking # _____

SAMPLE RECEIPT: Condition _____ Custody Seals _____

SPECIAL INSTRUCTIONS/COMMENTS: DUE: 3/17/99 R11 D2 R9 D3

Circle which metals are to be analyzed:

Metals: Al Sb Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Ag Na Sn V Zn
As Pb Se Tl Hg

Storage: _____

... with drinking water regulations? ☐ Yes ☐ No If yes, you must so indicate by writing "DW" for each such sample.

Henshaw Associates, Inc.
Environmental Engineering Services

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Strategic partnership for optimal client solutions.

Henshaw Associates, Inc.
Environmental Engineering Services

March 23, 1999

Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Southern Property Boundary Groundwater Sampling, QM4-1998
The O'Brien Corporation Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency Region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for The O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), fourth quarter 1998 (QM4-98) groundwater monitoring has been completed by Henshaw Associates, Inc. (Henshaw) on behalf of O'Brien. The monitoring is designed to evaluate groundwater along the southern boundary of the Property and the neighboring ICI Paint property by sampling existing monitoring wells. Sample locations are presented on Figure 1.

In keeping with our conversation of May 26, 1998, and previous submittals, the results of QM4-98 monitoring have been incorporated in this letter.

Site Setting

The Property is located at 450 East Grand Avenue in South San Francisco, California. For the purpose of this discussion, the Property shall include the land occupied by the ICI Paint manufacturing facility. The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The property is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an airfreight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

Geology

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay

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deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as Bay Mud. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

Hydrogeology

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of the monitoring wells sampled during QM4-98 was 25 feet BGS.

Field Activities

Sampling of the Southern Boundary groundwater was conducted on December 16, 1998. Three monitoring wells were sampled including MW-21, PM-09, and PM-14. Water levels were taken from the three wells prior to initiation of well purging. Table 1 presents well construction details and depth to water measurements. Monitoring wells were purged with dedicated tubing and a peristaltic pump, and sampled with dedicated bailers. Samples were collected from PM-09 and PM-14 when the monitoring wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes. MW-21, which was purged dry, was sampled after one hour was allowed to elapse. Samples were analyzed in accordance with the Workplan for priority pollutant metals (PPMs) by EPA 6000/7000, VOCs by EPA 8260, and SVOCs by EPA 8270. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 5-micron filters and field preserved for dissolved analysis. The 5-micron filters are used to filter dissolved metals per request by Kathy Baylor of the Environmental Protection Agency. Field parameters were recorded and are presented in Table 2.

Analytical Results

In the following discussion, metals results are presented in mg/L or parts per million while volatile organic compounds (VOCs) are presented in µg/L or parts per billion. No semivolatile organic compounds (SVOCs) were positively detected in samples collected during QM4-98 monitoring. Samples that were field filtered are discussed as "total" metals samples while field filtered samples are termed "dissolved".

Metals

Complete metals analytical results are presented in Table 3. Antimony was detected in total and dissolved metals samples from MW-21 at levels of 0.0031 mg/L and 0.052 mg/L, respectively. Arsenic was detected in each sample collected during QM4-98 sampling except for dissolved samples collected from PM-09 at levels ranging from 0.0021 mg/L (PM-14, dissolved) to 0.036 mg/L (MW-21, total). Chromium was detected in total samples collected from MW-21, PM-09 and PM-14 at levels ranging from 0.0037 mg/L (MW-21) to 0.018 (PM-14). Copper was detected in several samples at very low levels. Lead was detected in the total sample collected from MW-21 at 0.061 mg/L, and total and dissolved samples collected from PM-09 and PM-14

at levels ranging from 0.0029 mg/L (PM-14, dissolved) to 0.14 mg/L (PM-09 duplicate, total). Zinc and selenium were also detected in samples collected during QM4-98 monitoring at low levels (Table 3).

Volatile Organic Compounds

Volatile organic compounds (Table 4) benzene and total xylenes were detected in samples collected from PM-09 at concentrations ranging from 46 µg/L of benzene (PM-09 primary) to 110 µg/L of total xylenes (PM-09 duplicate). These detections are consistent with historical concentrations. Three other VOCs, 1,2-dichloroethane, chlorobenzene and ethylbenzene, were detected in samples collected from PM-09 at very low levels of 1 µg/L , 1 µg/L and 4 µg/L (PM-09 duplicate), respectively. This was the first detection of 1,2-dichloroethane during 1998 sampling activities. Chlorobenzene and ethylbenzene have been detected previously at very low levels (6/20/1998).

Semivolatile Organic Compounds

No SVOCs (Table 5) were detected during the QM4-98 sampling round.

Quality Control Samples

Relative percent difference (RPD) comparison between primary and duplicate samples collected from PM-09 during QM4-98 activities revealed that project targets for metals and VOCs (detections at greater than four times the laboratory reporting limit have a RPD less then or equal to 30%) were met with the exception of zinc results. There were no VOCs detected in the trip blank sample submitted during the QM4-98 sample round.

Water Levels

Water levels taken during the third quarter monitoring event are presented on Table 1 and Figure 1. Based upon these readings, the groundwater appears to trend in an eastern direction. Due to the linear orientation of the monitoring wells along an east-west axis, it is not possible to divine the north-west component of the groundwater piezometric surface.

Quarterly Summary

Low concentrations of metals were detected in water samples collected from MW-21, PM-09 and PM-14. Concentrations of dissolved, and thus mobile, metals detected in samples collected during monitoring activities continue to be at very low levels. Concentrations of benzene and total xylenes were detected in samples collected from PM-09 at levels consistent with historical values. Low concentrations of 1,2-dichloroethane, chlorobenzene and ethylbenzene were detected in samples collected from PM-09 at concentrations close to method reporting limits. No SVOCs were detected in samples collected during QM4-98. Analytical results from QM4-98 are consistent with historical values.

Yearly Summary

Four quarters of groundwater monitoring have been completed during 1998 at The O'Brien Corporation property located at 450 East Grand Avenue, South San Francisco, California. The

quarterly monitoring activities included sampling monitoring wells MW-21, PM-09 and PM-14 for constituents including metals, VOCs and SVOCs.

VOCs have been detected persistently in samples collected from PM-09. Specifically, benzene and total xylenes have been detected at levels significantly above method reporting limits. During 1998, the concentration of total xylenes in samples collected from PM-09 has declined from 430 µg/L in March of 1998 to 110 µg/L in December of 1998 (Figure 2). The concentration of benzene in samples collected from PM-09 has also declined from 90 µg/L in March of 1998 to 49 µg/L in December of 1998 (Figure 2). The benzene values are above the associated California Maximum Contaminant Level (MCLs) of 1 µg/L.

Low levels of metals have been detected persistently in samples collected from the three monitoring wells sampled during 1998 quarterly monitoring activities. Lead is considered to be the most important constituent of concern at the site due to on-site historical manufacturing activities and potential associated health risks. Table 7 presents a summary of lead data for 1998 and a short statistical summary. Figures 3 and 4 present 1998 sampling results for dissolved and total lead concentrations graphically.

Total lead has been routinely detected in samples collected from MW-21, PM-09 and PM-14 during 1998. As depicted on Figure 3, the concentrations of total lead in groundwater have fluctuated. The fluctuations do not appear to correlate well between sample locations or with pH and turbidity measurements taken at the time of sampling.

Dissolved lead has been intermittently detected at very low levels in samples collected from MW-21, PM-09 and PM-14 during 1998 (Figure 4). Due to it's mobility, dissolved lead is considered to be a good indicator of migration and health risk potential of lead in groundwater. During 1998, dissolved lead was only detected in samples collected from MW-21 and PM-14 during October 1998 monitoring. Dissolved lead was detected in samples collected from PM-09 in three of the four quarters of sampling. In all cases, positive detections of lead were reported at concentrations well below the MCL of 0.05 mg/L.

Evaluation of data from the 1998 groundwater monitoring program completed at The O'Brien Corporation property in South San Franciso in light of the lack of known beneficial use of the affected aquifer indicates that the groundwater quality beneath the site is relatively stable and does not present a significant risk to human health or the environment.

Please contact me at (650) 470-0800 with any questions.

Respectfully Submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Well Construction Details and Water Levels
Table 2	Field Parameters
Table 3	Metals Analytical Summary
Table 4	Volatile Organic Compounds Analytical Summary
Table 5	Semivolatile Organic Compounds Analytical Summary
Table 6	Relative Percent Difference Analyses
Table 7	Metals Analytical Summary - 1998
Figure 1	Property Information (Well locations with groundwater elevation information)
Figure 2	VOCs in Groundwater - 1998
Figure 3	Total Lead in Groundwater - 1998
Figure 4	Dissolved Lead in Groundwater - 1998
Appendix A	Laboratory Analytical Reports

cc: Mr. Jerome J. Crowley Jr., The O'Brien Corporation
Patrick J. Cafferty Jr., Esq., Munger Tolles & Olsen

TABLE 1
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Well ID	Installation Date	Stick Up (ft.)	Total Depth[1] (ft. BMP)	Total Depth[2] (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch.)	Depth to Water 12/16/98 (ft. BGS)	Groundwater Elevation 12/16/98 (ft. MSL)
MW-21	9/2/1987	2.0	24.7	25.0	12.24	13.0	23.0	10.0	25.0	4	5.82	6.42
PM-09	8/28/1987	2.0	14.8	14.0	10.07	8.0	13.0	5.0	13.5	2	5.52	4.55
PM-14	12/10/1993	0.0	9.8	12.0	9.35	7.0	12.0	6.0	10.0	2	3.12	6.23

Note:
BGS Below ground surface
BMP Below measuring point
MSL Mean sea level
[1] Depth measured in the field
[2] Depth from boring logs

TABLE 2
FIELD PARAMETERS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Sample Location	MW-21	PM-09	PM-14
Measurement Date	12/16/1998	12/16/1998	12/16/1998
pH	7.3	6.94	7.4
Conductance (µmhos/cm)	5040	3340	870
Temperature (°F)	66.2	65.0	62.1
Turbidity (NTU)	1.06	3.1	0.38

Note:
BGS Below ground surface

TABLE 3
METALS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location		MW21	MW21	PM09	PM09	PM09	PM09	PM14	PM14
Field Sample ID		MW21QM498	MW21QM498F	PM09QM498	PM09QM498F	HA20QM498	HA20QM498F	PM14QM498	PM14QM498F
Sample Date		12/16/98	12/16/98	12/16/98	12/16/98	12/16/98	12/16/98	12/16/98	12/16/98
Duplicate (Yes/No)		No	No	No	No	Yes	Yes	No	No
Total (T) or Dissolved (D)	MCL	T	D	T	D	T	D	T	D
Antimony	0.006	0.031	0.052	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic	0.05	0.036	0.032	0.0038	<0.0020	0.0046	<0.0020	0.0046	0.0021
Beryllium	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cadmium	0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.05	0.0037	<0.0010	0.0076	<0.0010	0.010	<0.0010	0.018	<0.0010
Copper	11	0.0027	0.0020	0.0047	<0.0010	0.0058	<0.0010	0.0026	0.0012
Lead	0.05	0.061	<0.0010	0.11	0.0037	0.14	0.0040	0.0029	<0.0010
Mercury	0.002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.1	0.014	0.0087	0.0091	0.0032	0.012	0.0032	0.028	0.0036
Selenium	0.05	0.0034	0.0037	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silver	0.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thallium	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	5	0.050	0.015	0.059	0.0065	0.072	0.015	0.019	0.020

Note:
<# Below detection limit
MCL California Maximum Contaminant Level

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW21	PM09	PM09	PM14	Trip Blank
Field Sample Name		MW21QM498	PM09QM498	HA20QM498	PM14QM498	TB-1
Sample Date		12/16/98	12/16/98	12/16/98	12/16/98	12/16/98
Duplicate		No	No	Yes	No	No
1,1,1-Trichloroethane	200	<0.7	<0.7	<0.7	<0.7	<0.7
1,1,2,2-Tetrachloroethane	1	<0.9	<0.9	<0.9	<0.9	<0.9
1,1,2-Trichloroethane	5	<0.9	<0.9	<0.9	<0.9	<0.9
1,1-Dichloroethane	5	<0.8	<0.8	<0.8	<0.8	<0.8
1,1-Dichloroethene	6	<0.8	<0.8	<0.8	<0.8	<0.8
1,2-Dichloroethane	0.5	<0.8	<0.8	1	<0.8	<0.8
1,2-Dichloropropane	5	<0.8	<0.8	<0.8	<0.8	<0.8
2-Butanone	NE	<3	<3	<3	<3	<3
2-Hexanone	NE	<4	<4	<4	<4	<4
4-Methyl-2-pentanone	NE	<2	<2	<2	<2	<2
Acetone	NE	<3	<3	<3	<3	<3
Benzene	1	<0.8	46	49	<0.8	<0.8
Bromodichloromethane	100(1)	<0.7	<0.7	<0.7	<0.7	<0.7
Bromoform	100(1)	<0.8	<0.8	<0.8	<0.8	<0.8
Bromomethane	100(1)	<0.9	<0.9	<0.9	<0.9	<0.9
Carbon Disulfide	NE	<0.7	<0.7	<0.7	<0.7	<0.7
Carbon Tetrachloride	0.5	<0.7	<0.7	<0.7	<0.7	<0.7
Chlorobenzene	70	<0.8	1	1	<0.8	<0.8
Chloroethane	NE	<0.7	<0.7	<0.7	<0.7	<0.7
Chloroform	100(1)	<0.7	<0.7	<0.7	<0.7	<0.7
Chloromethane	NE	<0.6	<0.6	<0.6	<0.6	<0.6
cis-1,2-Dichloroethene	6	<0.7	<0.7	<0.7	<0.7	<0.7
cis-1,3-Dichloropropene	0.5(2)	<0.8	<0.8	<0.8	<0.8	<0.8
Dibromochloromethane	100(1)	<0.8	<0.8	<0.8	<0.8	<0.8
Ethylbenzene	700	<0.6	3	4	<0.6	<0.6
Methylene Chloride	5	<0.8	<0.8	<0.8	<0.8	<0.8
Styrene	100	<0.9	<0.9	<0.9	<0.9	<0.9
Tetrachloroethene	5	<0.9	<0.9	<0.9	<0.9	<0.9
Toluene	150	<0.8	<0.8	<0.8	<0.8	<0.8
trans-1,2-Dichloroethene	10	<0.7	<0.7	<0.7	<0.7	<0.7
trans-1,3-Dichloropropene	NE	<0.8	<0.8	<0.8	<0.8	<0.8
Trichloroethene	5	<0.9	<0.9	<0.9	<0.9	<0.9
Vinyl Acetate	NE	<0.7	<0.7	<0.7	<0.7	<0.7
Vinyl Chloride	0.5	<0.6	<0.6	<0.6	<0.6	<0.6
Xylenes, Total	1750	<2	100	110	<2	<2

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW21	PM09	PM09	PM14
Field Sample Name		MW21QM498	PM09QM498	HA20QM498	PM14QM498
Sample Date		12/16/98	12/16/98	12/16/98	12/16/98
Duplicate (Yes/No)		No	No	Yes	No
1,2,4-Trichlorobenzene	70	<10	<10	<10	<10
1,2-Dichlorobenzene	600	<10	<10	<10	<10
1,3-Dichlorobenzene	NE	<10	<10	<10	<10
1,4-Dichlorobenzene	5	<10	<10	<10	<10
2,4,5-Trichlorophenol	NE	<10	<10	<10	<10
2,4,6-Trichlorophenol	NE	<10	<10	<10	<10
2,4-Dichlorophenol	NE	<10	<10	<10	<10
2,4-Dimethylphenol	NE	<10	<10	<10	<10
2,4-Dinitrophenol	NE	<50	<50	<50	<50
2,4-Dinitrotoluene	NE	<10	<10	<10	<10
2,6-Dinitrotoluene	NE	<10	<10	<10	<10
2-Chloronaphthalene	NE	<10	<10	<10	<10
2-Chlorophenol	NE	<10	<10	<10	<10
2-Methyl-4,6-dinitrophenol	NE	<50	<50	<50	<50
2-Methylnaphthalene	NE	<10	<10	<10	<10
2-Methylphenol	NE	<10	<10	<10	<10
2-Nitroaniline	NE	<50	<50	<50	<50
2-Nitrophenol	NE	<10	<10	<10	<10
3,3-Dichlorobenzidine	NE	<20	<20	<20	<20
3-Nitroaniline	NE	<50	<50	<50	<50
4-Bromophenyl phenyl ether	NE	<10	<10	<10	<10
4-Chloro-3-methylphenol	NE	<10	<10	<10	<10
4-Chloroaniline	NE	<10	<10	<10	<10
4-Chlorophenyl phenyl ether	NE	<10	<10	<10	<10
4-Methylphenol	NE	<10	<10	<10	<10
4-Nitroaniline	NE	<50	<50	<50	<50
4-Nitrophenol	NE	<50	<50	<50	<50
Acenaphthene	NE	<10	<10	<10	<10
Acenaphthylene	NE	<10	<10	<10	<10
Anthracene	NE	<10	<10	<10	<10
Benzo(a)anthracene	NE	<10	<10	<10	<10
Benzo(a)pyrene	0.2	<10	<10	<10	<10
Benzo(b)fluoranthene	NE	<10	<10	<10	<10
Benzo(g,h,i)perylene	NE	<10	<10	<10	<10
Benzo(k)fluoranthene	NE	<10	<10	<10	<10
Benzoic acid	NE	<50	<50	<50	<50
Benzyl alcohol	NE	<10	<10	<10	<10
Bis(2-chloroethoxy) methane	NE	<10	<10	<10	<10
bis(2-Chloroethyl) ether	NE	<10	<10	<10	<10
Bis(2-chloroisopropyl) Ether	NE	<10	<10	<10	<10
bis(2-Ethylhexyl) phthalate	4	<10	<10	<10	<10
Butyl benzyl phthalate	NE	<10	<10	<10	<10

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW21	PM09	PM09	PM14
Field Sample Name		MW21QM498	PM09QM498	HA20QM498	PM14QM498
Sample Date		12/16/98	12/16/98	12/16/98	12/16/98
Duplicate (Yes/No)		No	No	Yes	No
Chrysene	NE	<10	<10	<10	<10
Di-n-butyl phthalate	NE	<10	<10	<10	<10
Di-n-octyl phthalate	NE	<10	<10	<10	<10
Dibenzo(a,h)anthracene	NE	<10	<10	<10	<10
Dibenzofuran	NE	<10	<10	<10	<10
Diethyl phthalate	NE	<10	<10	<10	<10
Dimethyl phthalate	NE	<10	<10	<10	<10
Fluoranthene	NE	<10	<10	<10	<10
Fluorene	NE	<10	<10	<10	<10
Hexachlorobenzene	1	<10	<10	<10	<10
Hexachlorobutadiene	NE	<10	<10	<10	<10
Hexachlorocyclopentadiene	50	<10	<10	<10	<10
Hexachloroethane	NE	<10	<10	<10	<10
Indeno(1,2,3-c,d)pyrene	NE	<10	<10	<10	<10
Isophorone	NE	<10	<10	<10	<10
N-Nitroso-di-n-propylamine	NE	<10	<10	<10	<10
N-Nitrosodiphenylamine	NE	<10	<10	<10	<10
Naphthalene	NE	<10	<10	<10	<10
Nitrobenzene	NE	<10	<10	<10	<10
Pentachlorophenol	1	<50	<50	<50	<50
Phenanthrene	NE	<10	<10	<10	<10
Phenol	NE	<10	<10	<10	<10
Pyrene	NE	<10	<10	<10	<10

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Concentrations in mg/L or Parts Per Million							
Well Number	**PM09 (Total)**				**PM09 (Dissolved)**		
Field Sample ID	PM09QM498	HA20QM498			PM09QM498F	HA20QM498F	
Sample Date	12/16/98				12/16/98		
Duplicate	No	Yes	RPD		No	Yes	RPD
Metals Analyses							
Antimony	<0.0020	<0.0020	N/A		<0.0020	<0.0020	N/A
Arsenic	0.0038	0.0046	19%		<0.0020	<0.0020	N/A
Beryllium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Cadmium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Chromium	0.0076	0.010	27%		<0.0010	<0.0010	N/A
Copper	0.0047	0.0058	21%		<0.0010	<0.0010	N/A
Lead	0.11	0.14	24%		0.0037	0.0040	8%
Mercury	<0.00020	<0.00020	N/A		<0.00020	<0.00020	N/A
Nickel	0.0091	0.012	27%		0.0032	0.0032	0%
Selenium	<0.0020	<0.0020	N/A		<0.0020	<0.0020	N/A
Silver	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Thallium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Zinc	0.059	0.072	20%		0.0065	0.015	79%
Min of Abs RPD			19%				0%
Max of Abs RPD			27%				79%

Concentrations in µg/L or Parts Per Billion			
Well Number	**PM-09**		
Field Sample ID	PM09QM498	HA20QM498	
Sample Date	12/16/98		
Duplicate	No	Yes	RPD
1,1,1-Trichloroethane	<0.7	<0.7	N/A
1,1,2,2-Tetrachloroethane	<0.9	<0.9	N/A
1,1,2-Trichloroethane	<0.9	<0.9	N/A
1,1-Dichloroethane	<0.8	<0.8	N/A
1,1-Dichloroethene	<0.8	<0.8	N/A
1,2-Dichloroethane	<0.8	1	14%
1,2-Dichloropropane	<0.8	<0.8	N/A
2-Butanone	<3	<3	N/A
2-Hexanone	<4	<4	N/A
4-Methyl-2-pentanone	<2	<2	N/A
Acetone	<3	<3	N/A
Benzene	46	49	6%
Bromodichloromethane	<0.7	<0.7	N/A
Bromoform	<0.8	<0.8	N/A
Bromomethane	<0.9	<0.9	N/A
Carbon Disulfide	<0.7	<0.7	N/A
Carbon Tetrachloride	<0.7	<0.7	N/A
Chlorobenzene	1	1	0%
Chloroethane	<0.7	<0.7	N/A
Chloroform	<0.7	<0.7	N/A
Chloromethane	<0.6	<0.6	N/A
cis-1,2-Dichloroethene	<0.7	<0.7	N/A
cis-1,3-Dichloropropene	<0.8	<0.8	N/A
Dibromochloromethane	<0.8	<0.8	N/A
Ethylbenzene	3	4	29%
Methylene Chloride	<0.8	<0.8	N/A
Styrene	<0.9	<0.9	N/A
Tetrachloroethene	<0.9	<0.9	N/A
Toluene	<0.8	<0.8	N/A
trans-1,2-Dichloroethene	<0.7	<0.7	N/A
trans-1,3-Dichloropropene	<0.8	<0.8	N/A
Trichloroethene	<0.9	<0.9	N/A
Vinyl Acetate	<0.7	<0.7	N/A
Vinyl Chloride	<0.6	<0.6	N/A
Xylenes, Total	100	110	10%
Min of Abs RPD			0%
Max of Abs RPD			29%

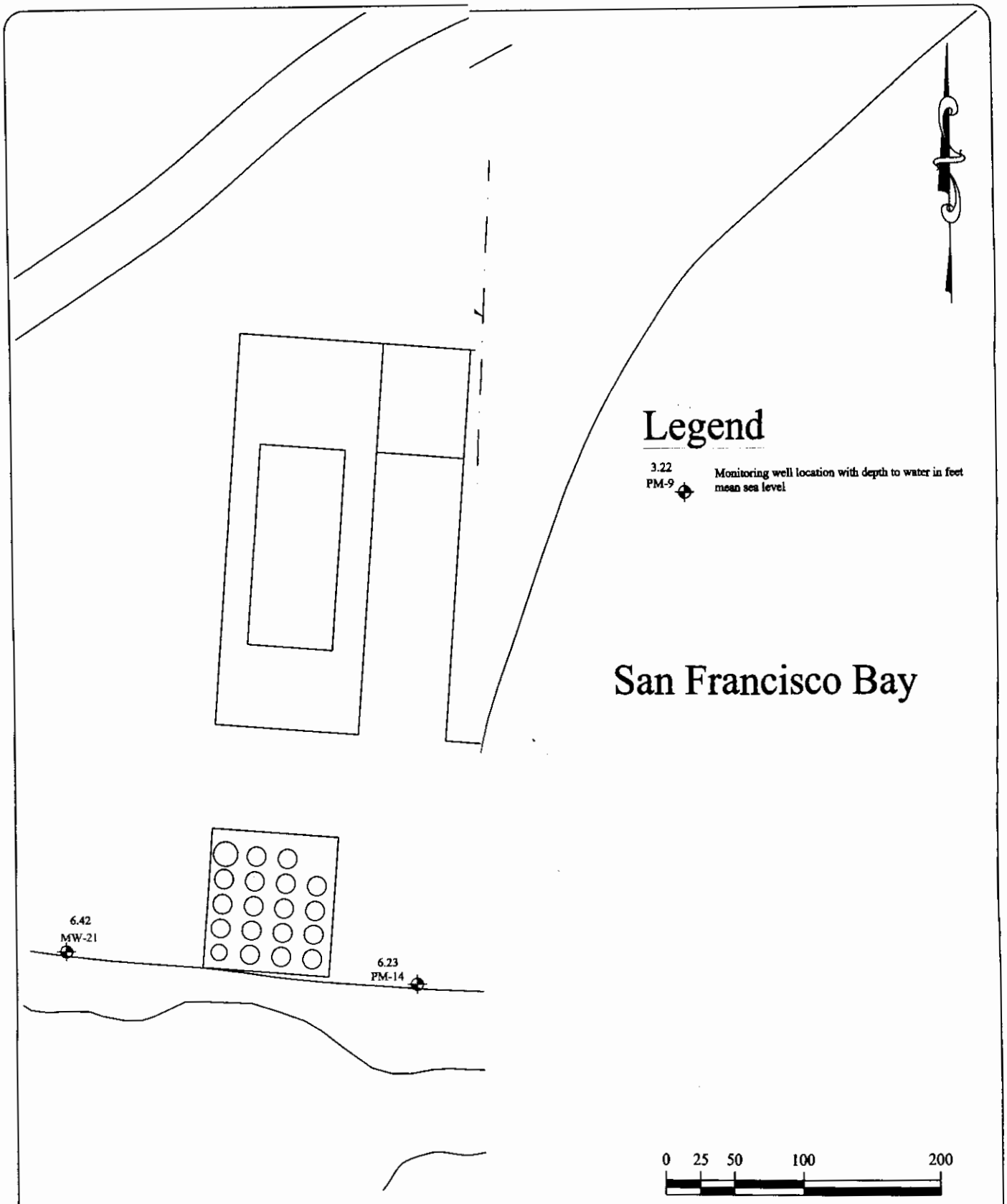
Note:
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs Absolute value
Dulicate analysis results of PM-09 samples for Semivolatile Organic Compounds were non-detect for all constituents and so do not support relative percent difference analysis
Dissolved samples were field filtered with a 5 micron filter
RPD Relative percent difference calculated as: (Primary Result-Duplicate Result)/(Mean of the both results) In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent detections where one compound was detected and one was not detected, and are included for comparison purposes only

TABLE 7
METALS ANALYTICAL SUMMARY - 1998
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Date	Dissolved Lead MW-21	Dissolved Lead PM-09	Dissolved Lead PM-14
3/26/1998	<0.04	<0.04	<0.04
6/30/1998	<0.003	0.0042	<0.003
10/2/1998	0.0013	0.002	0.0017
12/16/1998	<0.001	0.004	<0.001
Average	0.001	0.003	0.002
Standard Deviation (STD)	N/A	0.001	N/A
STD as Percent of Average	N/A	36%	N/A

Sample Date	Total Lead MW-21	Total Lead PM-09	Total Lead PM-14
3/26/1998	<0.04	<0.04	<0.04
6/30/1998	0.072	5.7	0.031
10/2/1998	0.03	1.1	0.026
12/16/1998	0.061	0.14	0.0029
Average	0.054	2.31	0.020
Standard Deviation (STD)	0.022	2.97	0.015
STD as Percent of Average	40%	128%	75%

Note:
<# Below detection limit
N/A Not applicable



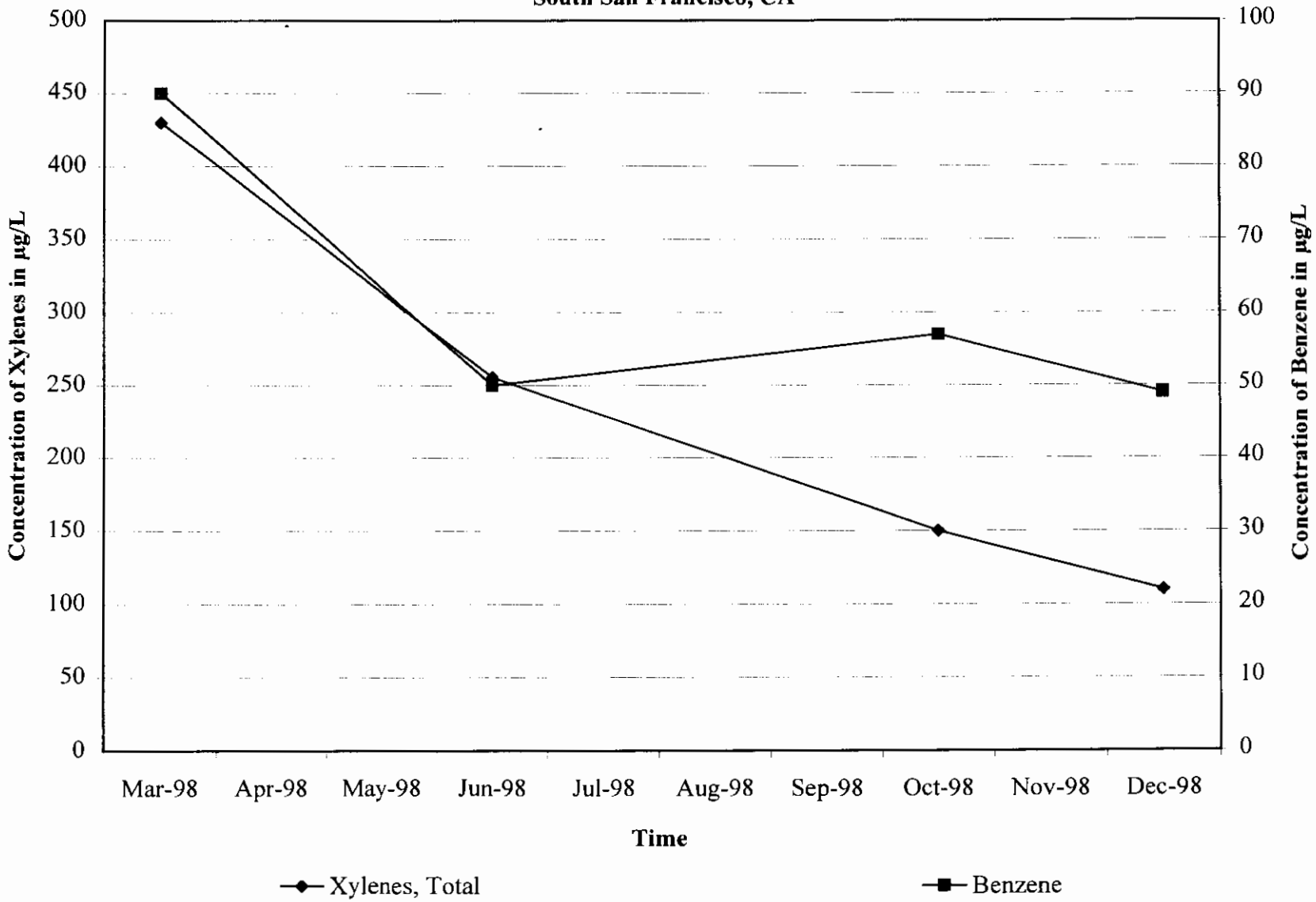
No.	Date	Revision	Approved

ORMATION
orporation
Avenue
ancisco
607

Figure
1
Project

Henshaw Associates, Inc

FIGURE 2: VOCS IN GROUNDWATER - 1998
The O'Brien Corporation
450 East Grand Avenue
South San Francisco, CA



G:\Files\112\2289-99.xls
3/23/99

FIGURE 3: TOTAL LEAD IN GROUNDWATER - 1998
The O'Brien Corporation
450 East Grand Avenue
South San Francisco, CA

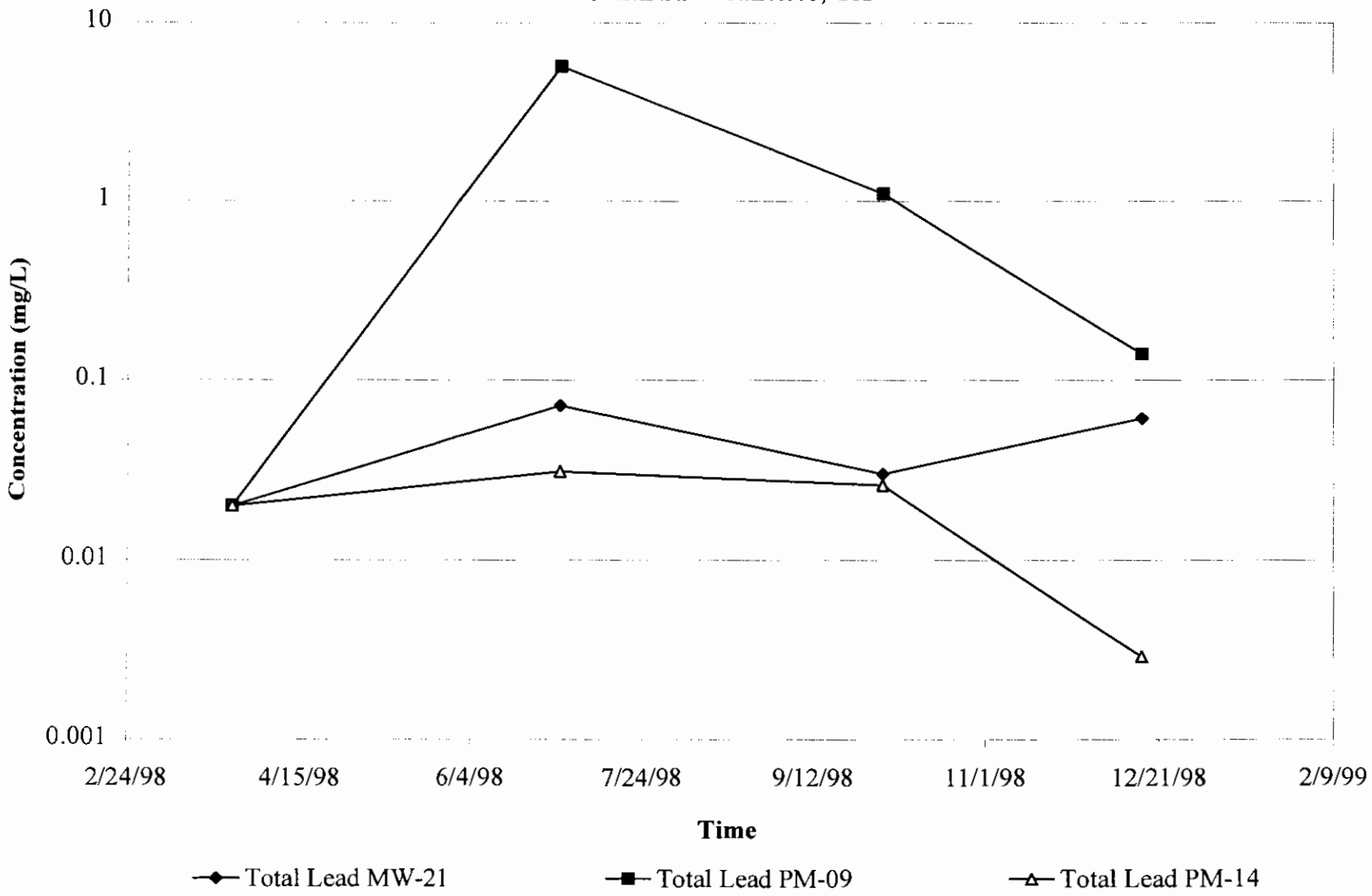
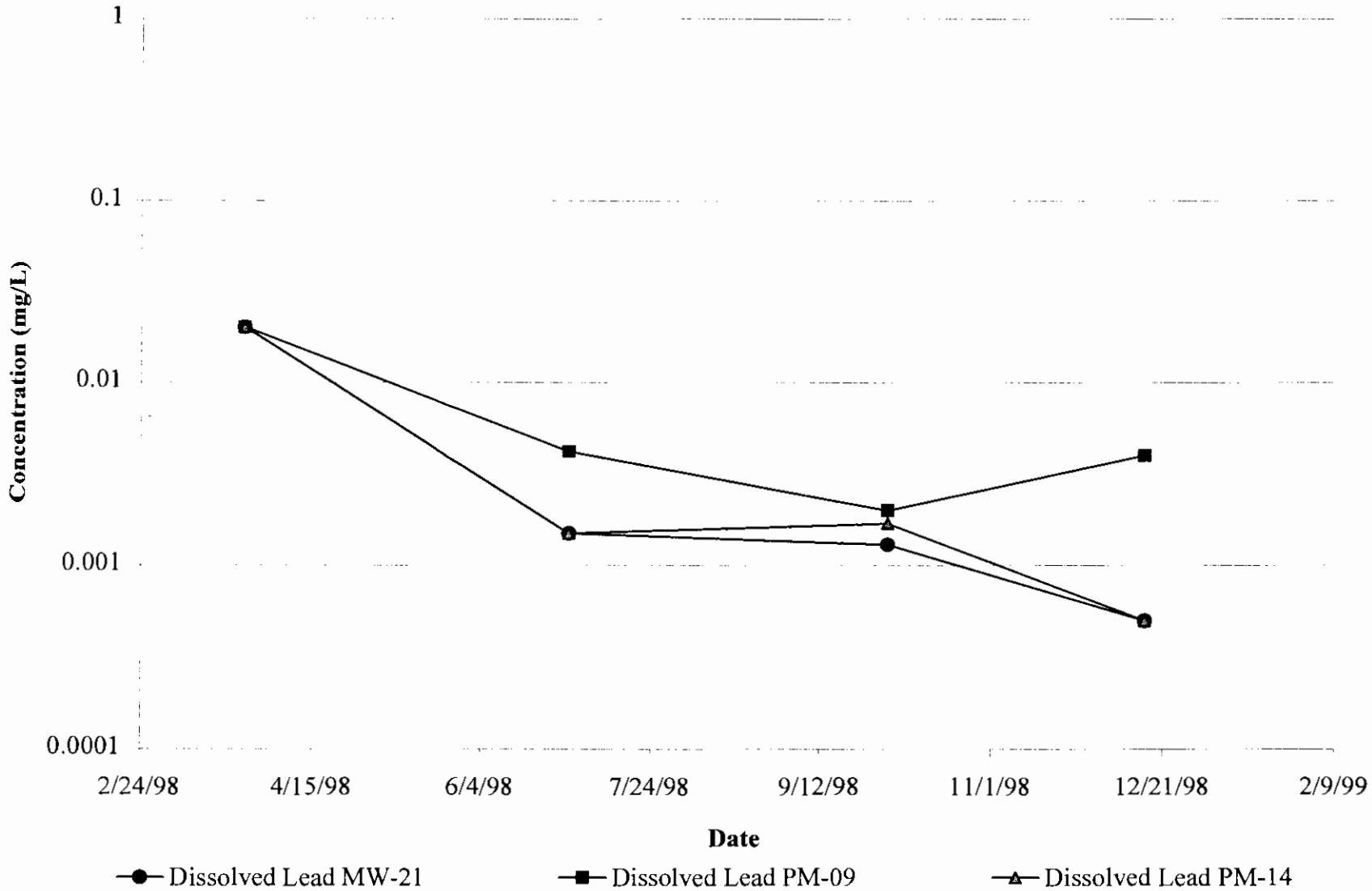


FIGURE 4: DISSOLVED LEAD IN GROUNDWATER - 1998
The O'Brien Corporation
450 East Grand Avenue
South San Francisco, CA



Appendix A

Laboratory Analytical Reports

Quanterra

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

January 19, 1999

QUANTERRA INCORPORATED PROJECT NUMBER: 303281
PO/CONTRACT: 112.E.01

Mike Harrison
Henshaw Associates
607 Menlo Avenue
Menlo Park, CA 94025

Dear Mr. Harrison,

This report contains the analytical results for the nine samples received under chain of custody by Quanterra Incorporated on December 17, 1998. These samples are associated with your O'Brien Prop project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916)374-4381.

Sincerely,

Jon Gildersleeve
Project Manager

Quanterra

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QUANTERRA INCORPORATED PROJECT NUMBER 303281

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Semivolatile Organics - Method 8270
Sample(s): 2, 4, 6, 8
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

Selected Metals - Various Methods
Sample(s): 1 - 8
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

Quanterra

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 303281

General Comments

8260 analyses were sub-contracted to Columbia Labs in Jacksonville, Florida. Results for the analyses were to be reported directly to Henshaw and Associates.

Selected Metals - Various Methods

The Method Blank associated with the original digest set contained Zinc at a concentration above the reporting limit. All samples were re-digested for Zinc only on December 30, 1998. The re-digested Method blank met criteria and all Zinc results are reported from the re-digestion set.

There were no other anomalies associated with this project.

Quanterra

Quanterra - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Quanterra

SAMPLE DESCRIPTION INFORMATION
for
Henshaw Associates

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
303281-0001-SA	PM09QM498F	AQUEOUS	16 DEC 98	15:06	17 DEC 98
303281-0002-SA	PM09QM498	AQUEOUS	16 DEC 98	15:06	17 DEC 98
303281-0003-SA	PM14QM498F	AQUEOUS	16 DEC 98	12:16	17 DEC 98
303281-0004-SA	PM14QM498	AQUEOUS	16 DEC 98	12:16	17 DEC 98
303281-0005-SA	MW21QM498F	AQUEOUS	16 DEC 98	13:19	17 DEC 98
303281-0006-SA	MW21QM498	AQUEOUS	16 DEC 98	13:19	17 DEC 98
303281-0007-SA	HA20QM498F	AQUEOUS	16 DEC 98	15:26	17 DEC 98
303281-0008-SA	HA20QM498	AQUEOUS	16 DEC 98	15:26	17 DEC 98
303281-0009-SA	TB-1	AQUEOUS	16 DEC 98		17 DEC 98

Quanterra

Selected Metals - Various Methods

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: PM09QM498F
Lab ID: 303281-0001-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Copper	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.0037	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.0032	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Zinc	0.0065	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	3

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: PM09QM498
Lab ID: 303281-0002-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.0038	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	0.0076	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Copper	0.0047	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.11	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.0091	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Zinc	0.059	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	1

Note 1 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: PM14QM498F
Lab ID: 303281-0003-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.0021	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Copper	0.0012	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.0036	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	3
Zinc	0.020	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	4

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Analysis date = 12/29/98

Note 4 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: PM14QM498
Lab ID: 303281-0004-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.0046	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	0.018	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Copper	0.0026	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.0029	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.028	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Zinc	0.019	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	3

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

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Rev 230787

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: MW21QM498F
Lab ID: 303281-0005-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	0.052	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.032	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Copper	0.0020	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.0087	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	0.0037	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	3
Zinc	0.015	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	4

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Analysis date = 12/29/98

Note 4 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: MW21QM498
Lab ID: 303281-0006-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	0.031	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.036	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	0.0037	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Copper	0.0027	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.061	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.014	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	0.0034	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	3
Zinc	0.050	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	4

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Analysis date = 12/29/98

Note 4 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: HA20QM498F
Lab ID: 303281-0007-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Copper	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.0040	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.0032	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Zinc	0.015	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	3

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: HA20QM498
Lab ID: 303281-0008-SA
Matrix: AQUEOUS Sampled: 16 DEC 98 Received: 17 DEC 98
Authorized: 17 DEC 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date	
Antimony	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Arsenic	0.0046	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Beryllium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Cadmium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Chromium	0.010	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Copper	0.0058	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Lead	0.14	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	1
Mercury	ND	mg/L	0.00020	245.1	21 DEC 98	22 DEC 98	
Nickel	0.012	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Selenium	ND	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	
Silver	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	
Thallium	ND	mg/L	0.0010	6020-M	22 DEC 98	28 DEC 98	2
Zinc	0.072	mg/L	0.0020	6020-M	22 DEC 98	28 DEC 98	3

Note 1 : Analysis date = 12/29/98

Note 2 : Analysis date = 12/29/98

Note 3 : Preparation date = 12/30/98
Analysis date = 01/05/99

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

QC LOT ASSIGNMENT REPORT - MS QC
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
303281-0002-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0004-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0006-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0008-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0002-SA	AQUEOUS	6020-M-AT		22 DEC 98-K	22 DEC 98-KA
303281-0004-SA	AQUEOUS	6020-M-AT		22 DEC 98-K	22 DEC 98-KA
303281-0006-SA	AQUEOUS	6020-M-AT		22 DEC 98-K	22 DEC 98-KA
303281-0008-SA	AQUEOUS	6020-M-AT		22 DEC 98-K	22 DEC 98-KA
303281-0001-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0003-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0005-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0007-SA	AQUEOUS	HG-CVAA-A		21 DEC 98-C	21 DEC 98-CA
303281-0001-SA	AQUEOUS	6020-M-AD		30 DEC 98-S	30 DEC 98-SA
303281-0003-SA	AQUEOUS	6020-M-AD		22 DEC 98-K	22 DEC 98-KA
303281-0005-SA	AQUEOUS	6020-M-AD		22 DEC 98-K	22 DEC 98-KA
303281-0007-SA	AQUEOUS	6020-M-AD		22 DEC 98-K	22 DEC 98-KA

Quanterra

METHOD BLANK REPORT
Metals Analysis and Preparation
Project: 303281

Test: HG-CVAA-AD Mercury, Cold Vapor AA (Dissolved)
Method: 245.1
Matrix: AQUEOUS
QC Lot: 21 DEC 98-CX QC Run: 21 DEC 98-C
Analyzed: 22 DEC 98 Time: 10:06

Analyte	Result	Units	Reporting Limit	Qualifier
Mercury	ND	mg/L	0.00020	

Test: 6020-WSAC-SCAN-AT ICPMS Quantitative Scan (16 Total Metals)
Method: 6020-M
Matrix: AQUEOUS
QC Lot: 22 DEC 98-KX QC Run: 22 DEC 98-K
Analyzed: 28 DEC 98 Time: 15:45

Analyte	Result	Units	Reporting Limit	Qualifier
Antimony	ND	mg/L	0.0020	
Arsenic	ND	mg/L	0.0020	
Beryllium	ND	mg/L	0.0010	
Cadmium	ND	mg/L	0.0010	
Chromium	ND	mg/L	0.0010	
Copper	ND	mg/L	0.0010	
Lead	ND	mg/L	0.0010	
Nickel	ND	mg/L	0.0010	
Selenium	ND	mg/L	0.0020	
Silver	ND	mg/L	0.0010	
Thallium	ND	mg/L	0.0010	
Zinc	0.0040	mg/L	0.0020	

Test: HG-CVAA-AD Mercury, Cold Vapor AA (Dissolved)
Method: 245.1
Matrix: AQUEOUS
QC Lot: 21 DEC 98-CX QC Run: 21 DEC 98-C
Analyzed: 22 DEC 98 Time: 10:06

Analyte	Result	Units	Reporting Limit	Qualifier
Mercury	ND	mg/L	0.00020	

ND = Not Detected

Quanterra

METHOD BLANK REPORT (cont.)
Metals Analysis and Preparation
Project: 303281

Test: 6020-WSAC-SCAN-AD ICPMS Quantitative Scan (16 Dissolved Metals)
Method: 6020-M
Matrix: AQUEOUS
QC Lot: 30 DEC 98-SX QC Run: 30 DEC 98-S
Analyzed: 05 JAN 99 Time: 10:29

Analyte	Result	Units	Reporting Limit	Qualifier
Antimony	ND	mg/L	0.0020	
Arsenic	ND	mg/L	0.0020	
Beryllium	ND	mg/L	0.0010	
Cadmium	ND	mg/L	0.0010	
Chromium	ND	mg/L	0.0010	
Copper	ND	mg/L	0.0010	
Lead	ND	mg/L	0.0010	
Nickel	ND	mg/L	0.0010	
Selenium	ND	mg/L	0.0020	
Silver	ND	mg/L	0.0010	
Thallium	ND	mg/L	0.0010	
Zinc	ND	mg/L	0.0020	

Test: 6020-WSAC-SCAN-AD ICPMS Quantitative Scan (16 Dissolved Metals)
Method: 6020-M
Matrix: AQUEOUS
QC Lot: 22 DEC 98-KX QC Run: 22 DEC 98-K
Analyzed: 28 DEC 98 Time: 15:45

Analyte	Result	Units	Reporting Limit	Qualifier
Antimony	ND	mg/L	0.0020	
Arsenic	ND	mg/L	0.0020	
Beryllium	ND	mg/L	0.0010	
Cadmium	ND	mg/L	0.0010	
Chromium	ND	mg/L	0.0010	
Copper	ND	mg/L	0.0010	
Lead	ND	mg/L	0.0010	
Nickel	ND	mg/L	0.0010	
Selenium	ND	mg/L	0.0020	
Silver	ND	mg/L	0.0010	
Thallium	ND	mg/L	0.0010	
Zinc	0.0040	mg/L	0.0020	

ND = Not Detected

LABORATORY CONTROL SAMPLE REPORT
Metals Analysis and Preparation
Project: 303281

Category: HG-CVAA-A Mercury by CVAA
Test: HG-CVAA-AD
Matrix: AQUEOUS
QC Lot: 21 DEC 98-CX QC Run: 21 DEC 98-C
Concentration Units: mg/L

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits
Mercury	0.00100	0.000961	96	76-117

Category: 6020-M-AT Metals by ICPMS
Test: 6020-WSAC-SCAN-AT
Matrix: AQUEOUS
QC Lot: 22 DEC 98-KX QC Run: 22 DEC 98-K
Concentration Units: mg/L

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits
Antimony	0.0500	0.0491	98	80-120
Arsenic	0.200	0.198	99	80-120
Beryllium	0.200	0.193	97	80-120
Cadmium	0.200	0.195	98	80-120
Chromium	0.200	0.213	106	80-120
Copper	0.200	0.210	105	80-120
Lead	0.200	0.236	118	80-120
Molybdenum	0.200	0.205	102	80-120
Nickel	0.200	0.211	105	80-120
Selenium	0.200	0.185	93	80-120
Silver	0.0500	0.0499	100	80-120
Thallium	0.0500	0.0535	107	80-120
Zinc	0.200	0.199	100	80-120

Category: 6020-M-AD Dissolved Metals by ICPMS
Test: 6020-WSAC-SCAN-AD
Matrix: AQUEOUS
QC Lot: 30 DEC 98-SX QC Run: 30 DEC 98-S
Concentration Units: mg/L

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits
Zinc	0.200	0.211	106	80-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)
Project: 303281

Category: 6020-M-AD Dissolved Metals by ICPMS
Test: 6020-WSAC-SCAN-AD
Matrix: AQUEOUS
QC Lot: 22 DEC 98-KX QC Run: 22 DEC 98-K
Concentration Units: mg/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Antimony	0.0500	0.0491	98	80-120
Arsenic	0.200	0.198	99	80-120
Beryllium	0.200	0.193	97	80-120
Cadmium	0.200	0.195	98	80-120
Chromium	0.200	0.213	106	80-120
Copper	0.200	0.210	105	80-120
Lead	0.200	0.236	118	80-120
Molybdenum	0.200	0.205	102	80-120
Nickel	0.200	0.211	105	80-120
Selenium	0.200	0.185	93	80-120
Silver	0.0500	0.0499	100	80-120
Thallium	0.0500	0.0535	107	80-120
Zinc	0.200	0.199	100	80-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra

ATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Metals Analysis and Preparation
Project: 303281

ategory: HG-CVAA-A Mercury by CVAA
Test : HG-CVAA-AD
Matrix : AQUEOUS
ample : 303306-0002
MS Run : 21 DEC 98-CA
Units : mg/L

Method: 245.1

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Mercury	ND	0.000923	0.000906	0.00100	0.00100	92	91	1.8	76-117	19

Category: 6020-M-AT Metals by ICPMS
Test : 6020-WSAC-SCAN-AT
atrix : AQUEOUS
Sample : 303281-0002
MS Run : 22 DEC 98-KA
nits : mg/L

Method: 6020-M

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
ntimony	ND	0.0496	0.0491	0.0500	0.0500	99	98	1.0	80-120	20
rsenic	0.00384	0.205	0.204	0.200	0.200	101	100	0.53	80-120	20
eryllium	ND	0.187	0.189	0.200	0.200	93	95	1.4	80-120	20
Cadmium	ND	0.182	0.179	0.200	0.200	91	90	1.6	80-120	20
romium	0.00757	0.215	0.208	0.200	0.200	104	100	3.4	80-120	20
opper	0.00469	0.193	0.191	0.200	0.200	94	93	1.1	80-120	20
Lead	0.110	0.306	0.348	0.200	0.200	98	119	13	80-120	20
Molybdenum	0.00243	0.231	0.233	0.200	0.200	115	115	0.60	80-120	20
ickel	0.00908	0.200	0.197	0.200	0.200	96	94	1.5	80-120	20
elenium	ND	0.192	0.193	0.200	0.200	96	97	0.70	80-120	20
Silver	ND	0.0440	0.0426	0.0500	0.0500	88	85	3.1	80-120	20
hallium	ND	0.0527	0.0510	0.0500	0.0500	105	102	3.2	80-120	20
inc	0.0754	0.252	0.249	0.200	0.200	88	87	1.2	80-120	20

ND = Not Detected

alculations are performed before rounding to avoid round-off errors in calculated results.

ATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Metals Analysis and Preparation
Project: 303281 (cont.)

ategory: 6020-M-AD Dissolved Metals by ICPMS
Test : 6020-WSAC-SCAN-AD Method: 6020-M
Matrix : AQUEOUS
ample : 303281-0001
..S Run : 30 DEC 98-SA
Units : *mg/L*

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Zinc	0.00648	0.173	0.173	0.200	0.200	83	83	0.12	80-120	20

Category: 6020-M-AD Dissolved Metals by ICPMS
Test : 6020-WSAC-SCAN-AD Method: 6020-M
atrix : AQUEOUS
ample : 303281-0002
MS Run : 22 DEC 98-KA
nits : mg/L

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
ntimony	ND	0.0496	0.0491	0.0500	0.0500	99	98	1.0	80-120	20
rsenic	0.00384	0.205	0.204	0.200	0.200	101	100	0.53	80-120	20
eryllium	ND	0.187	0.189	0.200	0.200	93	95	1.4	80-120	20
Cadmium	ND	0.182	0.179	0.200	0.200	91	90	1.6	80-120	20
hromium	0.00757	0.215	0.208	0.200	0.200	104	100	3.4	80-120	20
opper	0.00469	0.193	0.191	0.200	0.200	94	93	1.1	80-120	20
Lead	0.110	0.306	0.348	0.200	0.200	98	119	13	80-120	20
Molybdenum	0.00243	0.231	0.233	0.200	0.200	115	115	0.60	80-120	20
ickel	0.00908	0.200	0.197	0.200	0.200	96	94	1.5	80-120	20
elenium	ND	0.192	0.193	0.200	0.200	96	97	0.70	80-120	20
Silver	ND	0.0440	0.0426	0.0500	0.0500	88	85	3.1	80-120	20
Thallium	ND	0.0527	0.0510	0.0500	0.0500	105	102	3.2	80-120	20
inc	0.0754	0.252	0.249	0.200	0.200	88	87	1.2	80-120	20

ND = Not Detected

alculations are performed before rounding to avoid round-off errors in calculated results.

Volatile Organics - Method 8260

CHAIN-OF-CUSTODY

PROJECT NAME: HENSHAW	
PO NUMBER: CONTACT PM	
PROJECT MANAGER: Jon Gildersleeve	

QUANTERRA *ENVIRONMENTAL SERVICES*
880 Riverside Parkway
West Sacramento, CA 95605
Phone #: (916) 374-4381

DUE: 31 DEC 98
TO: Columbia Analytical Services, Inc
8540 Baycenter Road
Jacksonville, FL 32256

SAMPLE DESCRIPTION	LAB ID	DATE	TIME	MATRIX	CONTAINERS	ANALYSES: 8260	REMARKS/ SPCL INSTR
PM09QM498	303281-0002 SA	16 DEC 98	15:06	AQUEOUS	3-VOAh	X	
PM14QM498	303281-0004 SA	16 DEC 98	12:16	AQUEOUS	|	X	
MW21QM498	303281-0006 SA	16 DEC 98	13:19	AQUEOUS	|	X	
HA20QM498	303281-0008 SA	16 DEC 98	15:26	AQUEOUS	|	X	
TB-1	303281-0009 SA	16 DEC 98		AQUEOUS	+	X	

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
Relinquished by:	Jon Gildersleeve	Jon Gildersleeve	QES	12/24/98	15:45
Received by:					
Relinquished by:					
Received by:					

Comments: PLEASE CONTACT JON GILDERSLEEVE IF YOU HAVE ANY QUESTIONS. LOG 5119

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Henshaw Associates, Inc.	**Service Request:**	J9803336
Project:	Remco / 130.10.01	**Date Collected:**	12/16/98
Sample Matrix:	Water	**Date Received:**	12/29/98

Volatile Organic Compounds

Sample Name:	PM09QM498	Units:	ug/L (ppb)
Lab Code:	J9803336-001	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Acetone	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Benzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	46	
Bromodichloromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Bromoform	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromomethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
2-Butanone (MEK)	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Carbon Disulfide	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Carbon Tetrachloride	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chlorobenzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	1	
Chloroethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloroform	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloromethane	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Dibromochloromethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,2-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
trans-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Dichlorodifluoromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,2-Dichloropropane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
trans-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Ethylbenzene	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	3	
2-Hexanone	EPA 5030	8260	4	4	1	NA	12/29/98	<4	
Methylene Chloride	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
4-Methyl-2-pentanone (MIB	EPA 5030	8260	2	2	1	NA	12/29/98	<2	
Methyl tert-Butyl Ether	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Styrene	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
1,1,2,2-Tetrachloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Tetrachloroethene (PCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Toluene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1,1-Trichloroethane (TCA)	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,1,2-Trichloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichloroethene (TCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichlorofluoromethane (CF	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Trichlorotrifluoroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Vinyl Acetate	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Vinyl Chloride	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Total Xylenes	EPA 5030	8260	2	2	1	NA	12/29/98	100	

Approved By: Tom D. Kissinger Date: 1/5/99

1S44/052595

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: Remco / 130.10.01
Sample Matrix: Water

Service Request: J9803336
Date Collected: 12/16/98
Date Received: 12/29/98

Volatile Organic Compounds

Sample Name: PM14QM498
Lab Code: J9803336-002
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Acetone	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Benzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromodichloromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Bromoform	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromomethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
2-Butanone (MEK)	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Carbon Disulfide	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Carbon Tetrachloride	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chlorobenzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Chloroethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloroform	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloromethane	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Dibromochloromethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,2-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
trans-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Dichlorodifluoromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,2-Dichloropropane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
trans-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Ethylbenzene	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
2-Hexanone	EPA 5030	8260	4	4	1	NA	12/29/98	<4	
Methylene Chloride	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
4-Methyl-2-pentanone (MIB	EPA 5030	8260	2	2	1	NA	12/29/98	<2	
Methyl tert-Butyl Ether	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Styrene	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
1,1,2,2-Tetrachloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Tetrachloroethene (PCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Toluene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1,1-Trichloroethane (TCA)	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,1,2-Trichloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichloroethene (TCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichlorofluoromethane (CF	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Trichlorotrifluoroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Vinyl Acetate	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Vinyl Chloride	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Total Xylenes	EPA 5030	8260	2	2	1	NA	12/29/98	<2	

Approved By: Tom D. Kissinger Date: 1/5/99

1S44 052595

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: Remco / 130.10.01
Sample Matrix: Water

Service Request: J9803336
Date Collected: 12/16/98
Date Received: 12/29/98

Volatile Organic Compounds

Sample Name: MW21QM498
Lab Code: J9803336-003
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Acetone	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Benzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromodichloromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Bromoform	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromomethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
2-Butanone (MEK)	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Carbon Disulfide	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Carbon Tetrachloride	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chlorobenzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Chloroethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloroform	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloromethane	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Dibromochloromethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,2-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
trans-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Dichlorodifluoromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,2-Dichloropropane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
trans-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Ethylbenzene	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
2-Hexanone	EPA 5030	8260	4	4	1	NA	12/29/98	<4	
Methylene Chloride	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
4-Methyl-2-pentanone (MIB	EPA 5030	8260	2	2	1	NA	12/29/98	<2	
Methyl tert-Butyl Ether	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Styrene	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
1,1,2,2-Tetrachloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Tetrachloroethene (PCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Toluene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1,1-Trichloroethane (TCA)	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,1,2-Trichloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichloroethene (TCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichlorofluoromethane (CF	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Trichlorotrifluoroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Vinyl Acetate	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Vinyl Chloride	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Total Xylenes	EPA 5030	8260	2	2	1	NA	12/29/98	<2	

Approved By: Tom D. Wisniewski Date: 1/5/99

1S44/052595

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: Remco / 130.10.01
Sample Matrix: Water

Service Request: J9803336
Date Collected: 12/16/98
Date Received: 12/29/98

Volatile Organic Compounds

Sample Name: HA20QM498
Lab Code: J9803336-004
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Acetone	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Benzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	49	
Bromodichloromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Bromoform	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromomethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
2-Butanone (MEK)	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Carbon Disulfide	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Carbon Tetrachloride	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chlorobenzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	1	
Chloroethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloroform	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloromethane	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Dibromochloromethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,2-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	1	
1,1-Dichloroethene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
trans-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Dichlorodifluoromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,2-Dichloropropane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
trans-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Ethylbenzene	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	4	
2-Hexanone	EPA 5030	8260	4	4	1	NA	12/29/98	<4	
Methylene Chloride	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
4-Methyl-2-pentanone (MIB	EPA 5030	8260	2	2	1	NA	12/29/98	<2	
Methyl tert-Butyl Ether	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Styrene	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
1,1,2,2-Tetrachloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Tetrachloroethene (PCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Toluene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1,1-Trichloroethane (TCA)	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,1,2-Trichloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichloroethene (TCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichlorofluoromethane (CF	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Trichlorotrifluoroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Vinyl Acetate	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Vinyl Chloride	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Total Xylenes	EPA 5030	8260	2	2	1	NA	12/29/98	110	

Approved By: Tom D. Lissiman Date: 1/5/99

1S44/052595

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Henshaw Associates, Inc.
Project: Remco / 130.10.01
Sample Matrix: Water

Service Request: J9803336
Date Collected: 12/16/98
Date Received: 12/29/98

Volatile Organic Compounds

Sample Name: TB-1
Lab Code: J9803336-005
Test Notes:

Units: ug/L (ppb)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Acetone	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Benzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromodichloromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Bromoform	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Bromomethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
2-Butanone (MEK)	EPA 5030	8260	3	3	1	NA	12/29/98	<3	
Carbon Disulfide	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Carbon Tetrachloride	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chlorobenzene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Chloroethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloroform	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Chloromethane	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Dibromochloromethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,2-Dichloroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1-Dichloroethene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
trans-1,2-Dichloroethene	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Dichlorodifluoromethane	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,2-Dichloropropane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
cis-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
trans-1,3-Dichloropropene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Ethylbenzene	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
2-Hexanone	EPA 5030	8260	4	4	1	NA	12/29/98	<4	
Methylene Chloride	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
4-Methyl-2-pentanone (MIB	EPA 5030	8260	2	2	1	NA	12/29/98	<2	
Methyl tert-Butyl Ether	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Styrene	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
1,1,2,2-Tetrachloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Tetrachloroethene (PCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Toluene	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
1,1,1-Trichloroethane (TCA)	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
1,1,2-Trichloroethane	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichloroethene (TCE)	EPA 5030	8260	0.9	0.9	1	NA	12/29/98	<0.9	
Trichlorofluoromethane (CF	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Trichlorotrifluoroethane	EPA 5030	8260	0.8	0.8	1	NA	12/29/98	<0.8	
Vinyl Acetate	EPA 5030	8260	0.7	0.7	1	NA	12/29/98	<0.7	
Vinyl Chloride	EPA 5030	8260	0.6	0.6	1	NA	12/29/98	<0.6	
Total Xylenes	EPA 5030	8260	2	2	1	NA	12/29/98	<2	

Approved By: Tom D. Higginson Date: 1/5/99

1S44/052595

Quanterra

Semivolatile Organics - Method 8270

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM498
LAB ID: 303281-0002-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM498
LAB ID: 303281-0002-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM498
LAB ID: 303281-0002-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range
Nitrobenzene-d5	76 %	55 - 102
2-Fluorobiphenyl	65 %	57 - 106
Terphenyl-d14	69 %	63 - 110
Phenol-d5	29 %	10 - 67
2-Fluorophenol	40 %	20 - 78
2,4,6-Tribromophenol	77 %	56 - 120

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM498
LAB ID: 303281-0004-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 06 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM498
LAB ID: 303281-0004-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 06 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM498
LAB ID: 303281-0004-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 06 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range	
Nitrobenzene-d5	55 %	55 - 102	
2-Fluorobiphenyl	56 %	57 - 106	i
Terphenyl-d14	61 %	63 - 110	i
Phenol-d5	22 %	10 - 67	
2-Fluorophenol	30 %	20 - 78	
2,4,6-Tribromophenol	66 %	56 - 120	

Note i = Surrogate recovery is outside of control limits.

Reported By: Susan Griffin

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: MW21QM498
LAB ID: 303281-0006-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: MW21QM498
LAB ID: 303281-0006-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

(cont.)

Client Name: Henshaw Associates
Client ID: MW21QM498
LAB ID: 303281-0006-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range
Nitrobenzene-d5	59 %	55 - 102
2-Fluorobiphenyl	63 %	57 - 106
Terphenyl-d14	68 %	63 - 110
Phenol-d5	26 %	10 - 67
2-Fluorophenol	35 %	20 - 78
2,4,6-Tribromophenol	78 %	56 - 120

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: HA20QM498
LAB ID: 303281-0008-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: HA20QM498
LAB ID: 303281-0008-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Susan Griffin

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

(cont.)

Client Name: Henshaw Associates
Client ID: HA20QM498
LAB ID: 303281-0008-SA
Matrix: AQUEOUS
Authorized: 17 DEC 98

Sampled: 16 DEC 98
Prepared: 18 DEC 98

Received: 17 DEC 98
Analyzed: 05 JAN 99

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range
Nitrobenzene-d5	74 %	55 - 102
2-Fluorobiphenyl	63 %	57 - 106
Terphenyl-d14	70 %	63 - 110
Phenol-d5	27 %	10 - 67
2-Fluorophenol	36 %	20 - 78
2,4,6-Tribromophenol	77 %	56 - 120

Reported By: Susan Griffin

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

QC LOT ASSIGNMENT REPORT - MS QC
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
303281-0002-SA	AQUEOUS	625-A	18 DEC 98-11C	18 DEC 98-11C	
303281-0004-SA	AQUEOUS	625-A	18 DEC 98-11C	18 DEC 98-11C	
303281-0006-SA	AQUEOUS	625-A	18 DEC 98-11C	18 DEC 98-11C	
303281-0008-SA	AQUEOUS	625-A	18 DEC 98-11C	18 DEC 98-11C	

Quanterra

METHOD BLANK REPORT
Semivolatile Organics by GC/MS
Project: 303281

Test: 8270CP-TCL-A Semivolatile Organics Target Compound List (TCL)
Method: 8270
Matrix: AQUEOUS
QC Lot: 18 DEC 98-11C QC Run: 18 DEC 98-11C
Analyzed: 05 JAN 99 Time: 12:18

Analyte	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	

ND = Not Detected

Quanterra

METHOD BLANK REPORT (cont.)
Semivolatile Organics by GC/MS
Project: 303281

Test: 8270CP-TCL-A Semivolatile Organics Target Compound List (TCL)
Method: 8270
Matrix: AQUEOUS
QC Lot: 18 DEC 98-11C QC Run: 18 DEC 98-11C
Analyzed: 05 JAN 99 Time: 12:18

Analyte	Result	Units	Reporting Limit	Qualifier
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

Surrogate	% Recovery	Acceptable Range
Nitrobenzene-d5	56	55 -102
2-Fluorobiphenyl	59	57 -106
Terphenyl-d14	70	63 -110
Phenol-d5	20	10 -67
2-Fluorophenol	31	20 -78
2,4,6-Tribromophenol	63	56 -120

ND = Not Detected

Quanterra

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS
Project: 303281

Category: 625-A Acid, Base and Neutrals by GC/MS.
Testcode: 8270CP-TCL-A Method: 8270
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 18 DEC 98-11C Analyzed Date: 06 JAN 99 Time: 16:52

Analyte	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy (%) DCS1	Accuracy (%) DCS2	Limits	Precision (RPD) DCS	Precision (RPD) Limit
Phenol	75.0	17.3	17.1	23	23	10-66	1.2	19
2-Chlorophenol	75.0	39.6	39.9	53	53	48-101	0.75	19
1,4-Dichlorobenzene	50.0	25.6	25.6	51	51	43-95	0.0	27
N-Nitroso-di-n-propylamine	50.0	26.7	27.0	53	54	43-98	1.1	23
1,2,4-Trichlorobenzene	50.0	28.6	28.7	57	57	46-100	0.35	24
4-Chloro-3-methylphenol	75.0	42.2	44.5	56	59	41-111	5.3	19
Acenaphthene	50.0	31.7	32.3	63	65	57-105	1.9	17
4-Nitrophenol	75.0	16.1	16.6	21	22	10-59	3.1	30
2,4-Dinitrotoluene	50.0	33.2	34.0	66	68	56-104	2.4	17
Pentachlorophenol	75.0	52.4	54.1	70	72	27-118	3.2	27
Pyrene	50.0	34.2	34.2	68	68	61-115	0.0	19

Surrogate	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy(%) DCS1	Accuracy(%) DCS2	Limits
Nitrobenzene-d5	50	29	29	58	58	55-102
2-Fluorobiphenyl	50	32	32	64	64	57-106
Terphenyl-d14	50	33	33	67	66	63-110
Phenol-d5	75	17	20	23	27	10-67
2-Fluorophenol	75	23	23	31	31	20-78
2,4,6-Tribromophenol	75	57	59	76	78	56-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

[redacted]

Chain of Custody Record

Quanterra

A 4124

ent: HEUSH AW ASSOC	Project Manager: MIKE HARRISON	Date: 12/16/98	Chain Of Custody Number: 41952
ddress: 11875 DUBLIN BLVD A-200	Telephone Number (Area Code)/Fax Number: 925-551-7272	Lab Number:	Page 1 of 2
y: DUBLIN; State: CA; Zip Code: 94568	Site Contact: KRIS LARSON		
oject Name: O'BRIEN PROP	Carrier/Waybill Number:		
ntract/Purchase Order/Quote No.: 112 E-01			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	8260 Low Level	8270	PPM Dissolved (Field Filtered)	PPM Total
M09 QM498F	12/16/98	1506	WATER	1L	PL	1	HNO3	good			X	
M09 QM498		1506		1L	PL	1	HNO3					X
M09 QM498		1506		1L	BL	2	—			X		
M09 QM498		1506		40m	GL	3	HCL		X			
M14 QM498F		1216		1L	PL	1	HNO3				X	
M14 QM498		1216		1L	PL	1	HNO3					X
M14 QM498		1216		1L	BL	2	—			X		
M14 QM498		1216		40mL	GL	3	HCL		X			
MW21 QM498F		~~1121~~ 1319		1L	PL	1	HNO3				X	
MW21 QM498		~~1121~~ 1319		1L	PL	1	HNO3					X
MW21 QM498		1319		1L	BL	2	—			X		
MW21 QM498		1319		40mL	GL	3	HCL		X			
HA20 QM498F		1526		1L	PL	1	HNO3				X	
HA20 QM498		1526		1L	PL	1	HNO3					X
HA20 QM498		1526		1L	BL	2	—			X		
HA20 QM498		1526		40mL	GL	3	HCL	2 vials/2 mmbubbles	X			

Analysis

ocial Instructions

as 121798

ssible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

n Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify)

	Date	Time		Date	Time
Relinquished By			1. Received By: [signature]	121798	1900
Relinquished By			2. Received By		
Relinquished By			3. Received By		

ments

TRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

A-4124

ent: HENSHAW ASSOC	Project Manager: MIKE HARRISON	Date: 12/16/98	Chain Of Custody Number: 41953
dress: 11875 DUBLIN BLVD A-200	Telephone Number (Area Code)/Fax Number: 925-551-7272	Lab Number:	Page 2 of 2
y: DUBLIN — State: CA — Zip Code: 94568	Site Contact: KRIS LARSON		
oject Name: O'BRIEN PROP	Carrier/Waybill Number:		
ntract/Purchase Order/Quote No.: 112.E.01			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: 8260 (Low Level)
TB-1	12/16/98		WATER	40 mL	BL	3	HCL	good CW 121798	X

ecial Instructions

sible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

n Around Time Required: ☐ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
elinquished By			1. Received By: Cheryl Hyts	12/17/98	1900
elinquished By			2. Received By		
elinquished By			3. Received By		

nments

TRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Henshaw Associates, Inc.
Environmental Engineering Services

January 7, 1999

Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Southern Property Boundary Groundwater Sampling, QM3-1998
The O'Brien Corporation Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency Region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for The O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), third quarter 1998 (QM3-98) groundwater monitoring has been completed by Henshaw Associates, Inc. (Henshaw) on behalf of O'Brien. The monitoring is designed to evaluate groundwater along the southern boundary of the Property and the neighboring ICI Paint property by sampling existing monitoring wells. Sample locations are presented on Figure 1.

In keeping with our conversation of May 26, 1998, and previous submittals, the results of QM3-98 monitoring have been incorporated in this letter.

Site Setting

The Property is located at 450 East Grand Avenue in South San Francisco, California. For the purpose of this discussion, the Property shall include the land occupied by the ICI Paint manufacturing facility. The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The property is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

Geology

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay

deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as Bay Mud. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

Hydrogeology

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of the monitoring wells sampled during QM3-98 was 25 feet BGS.

Field Activities

Sampling of the Southern Boundary groundwater was conducted on October 2, 1998. Three monitoring wells were sampled including MW-21, PM-09, and PM-14. Water levels were taken from the three wells prior to initiation of well purging. Table 1 presents well construction details and depth to water measurements. Monitoring wells were purged with dedicated tubing and a peristaltic pump, and sampled with dedicated bailers. Samples were collected from PM-09 and PM-14 when the monitoring wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes. MW-21, which was purged dry, was sampled after three hours were allowed to elapse. Samples were analyzed in accordance with the Workplan for priority pollutant metals (PPMs) by EPA 6000/7000, VOCs by EPA 8240, and SVOCs by EPA 8270. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 0.45-micron filters and field preserved for dissolved analysis. The 0.45-micron filters were used after it was discovered in the field that Henshaw's supplier had incorrectly delivered 0.45-micron filters rather then the 5-micron filters ordered for this project. Field sampling with the 0.45-micron filters was accomplished following consultation with Kathy Baylor of the Environmental Protection Agency during which Henshaw received permission to proceed. Field parameters were recorded and are presented in Table 2.

Analytical Results

In the following discussion, metals results are presented in mg/L or parts per million while volatile organic compounds are presented in µg/L or parts per billion. No semivolatile organic compounds were positively detected in samples collected during QM3-98 monitoring. Samples field filtered are discussed as "total" metals samples while field filtered samples are termed "dissolved".

Metals

Complete metals analytical results are presented in Table 3. Antimony was detected in total or dissolved metals samples from PM-09 and MW-21 at levels ranging from 0.0035 mg/L to 0.041 mg/L, respectively. Arsenic was detected in each sample collected during QM3-98 sampling at levels ranging from 0.0021 mg/L (PM-14, dissolved) to 0.065 mg/L (MW-21, total). Chromium was detected in total or dissolved samples collected from MW-21, PM-09 and PM-14 at levels

ranging from 0.0018 mg/L (PM-09, dissolved) to 0.15 (PM-14, total). Copper was detected in several samples at very low levels. Lead was detected in both total and dissolved samples collected from the three wells sampled during the QM3-98 sampling event at levels ranging from 0.0012 mg/L (PM-09, dissolved) to 1.1 mg/L (PM-09, total). Mercury was detected at low levels in total metals samples collected from PM-09 at a concentration of 0.00023 mg/L. Zinc was also detected in samples collected during QM3-98 monitoring at low levels (see Table 3).

Volatile Organic Compounds

Volatile organic compounds (Table 4) benzene and total xylenes were detected in samples collected from PM-09 at concentrations ranging from 43 µg/L of benzene (PM-09 duplicate) to 150 µg/L of total xylenes (PM-09 primary). These detections are similar to historical concentrations.

Semivolatile Organic Compounds

No SVOCs (Table 5) were detected during the QM3-98 sampling round.

Quality Control Samples

Relative percent difference (RPD) comparison between primary and duplicate samples collected from PM-09 during QM3-98 activities revealed that project targets for metals (detections at greater than four times the laboratory reporting limit have a RPD less then or equal to 30%) were met. Only two VOCs were available for comparison of RPDs, benzene and total xylenes. The RPD for benzene was acceptable (28%) while the RPD for total xylene was above project goals (47%). The large difference between total xylene concentrations found in the primary and duplicate sample was reported to the analytical laboratory (Quanterra) but may be exacerbated due to the different serial dilutions with which the samples in question were analyzed. There were no VOCs detected in either trip blank sample submitted during the QM3-98 sample round.

Water Levels

Water levels taken during the third quarter monitoring event are presented on Table 1 and Figure 1. Based upon these readings, the groundwater does not present an obvious directional trend.

Summary

Low concentrations of metals were detected in water samples collected from MW-21, PM-09 and PM-14. Concentrations of dissolved, and thus mobile, metals detected in samples collected during monitoring activities continue to be at very low levels. Concentrations of benzene and total xylenes were detected in samples collected from PM-09. No semivolatile organic compounds were detected in samples collected during QM3-98. Analytical results from QM3-98 are consistent with historical values.

Based upon the results of third quarter 1998 monitoring, it is apparent that there are not significant levels of mobile metals moving within the shallow groundwater beneath the subject property. Low levels of volatile organic compounds can be found in groundwater proximate to monitoring well PM-09.

Please contact me at (650) 470-0800 with any questions.

Respectfully Submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Well Construction Details and Water Levels
Table 2	Field Parameters
Table 3	Metals Analytical Summary
Table 4	Volatile Organic Compounds Analytical Summary
Table 5	Semivolatile Organic Compounds Analytical Summary
Table 6	Relative Percent Difference Analyses
Figure 1	Property Information (Well locations with groundwater elevation information)
Appendix A	Laboratory Analytical Reports

cc: Mr. Jerome J. Crowley Jr., The O'Brien Corporation
Patrick J. Cafferty Jr., Esq., Munger Tolles & Olsen

TABLE 1
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Well ID	Installation Date	Stick Up (ft.)	Total Depth[1] (ft. BMP)	Total Depth[2] (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch.)	Depth to Water 10/2/98 (ft. BGS)	Groundwater Elevation 10/2/98 (ft. MSL)
MW-21	9/2/87	2.0	24.8	25.0	12.24	13.0	23.0	10.0	25.0	4	7.30	4.94
PM-09	8/28/87	2.0	14.5	14.0	10.07	8.0	13.0	5.0	13.5	2	6.85	3.22
PM-14	12/10/93	0.0	9.9	12.0	9.35	7.0	12.0	6.0	10.0	2	6.85	2.50

Note:
BGS Below ground surface
BMP Below measuring point
MSL Mean sea level
[1] Depth measured in the field
[2] Depth from boring logs

TABLE 2
FIELD PARAMETERS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Sample Location	MW-21	PM-09	PM-14
Measurement Date	10/2/98	10/2/98	10/2/98
pH	8.82	8.19	8.17
Conductance (µmhos/cm)	6170	3270	1040
Temperature (°F)	61.7	65.4	68.5
Turbidity (NTU)	20.8	39.2	26.5

Note:
BGS Below ground surface

TABLE 3
METALS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location		MW-21	MW-21	PM-09	PM-09	PM-09	PM-09	PM-14	PM-14
Field Sample ID		MW21QM398	MW21QM398F	PM09QM398	PM09QM398F	HA20QM398	HA20QM398F	PM14QM398	PM14QM398F
Sample Date		10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98
Duplicate (Yes/No)		No	No	No	No	Yes	Yes	No	No
Total (T) or Dissolved (D)	MCL	T	D	T	D	T	D	T	D
Antimony	0.006	0.023	0.041	0.0035	<0.0020	0.0037	<0.0020	<0.0020	<0.0020
Arsenic	0.05	0.065	0.060	0.0094	0.0023	0.0096	0.0031	0.0037	0.0021
Beryllium	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cadmium	0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.05	0.0021	<0.0010	0.068	0.0018	0.072	0.0021	0.15	<0.0010
Copper	11	0.0019	0.0032	0.016	<0.0010	0.021	<0.0010	0.019	<0.0010
Lead	0.05	0.030	0.0013	0.93	0.0012	1.1	0.0020	0.026	0.0017
Mercury	0.002	<0.00020	<0.00020	0.00023	<0.00020	0.00023	<0.00020	<0.00020	<0.00020
Nickel	0.1	0.013	0.011	0.061	0.0037	0.067	0.0043	0.23	0.0045
Selenium	0.05	<0.0020	0.0034	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silver	0.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thallium	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	5	0.064	0.047	0.36	0.016	0.41	0.017	0.053	0.0046

Note:
<# Below detection limit

Henshaw Associates, Inc.

TABLE 4
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MW-21	PM-09	PM-09	PM-14	Trip Blank 1	Trip Blank 2
Field Sample Name	MW21QM398	PM09QM398	HA20QM398	PM14QM398	TB-1	TB-2
Sample Date	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98	10/2/98
Duplicate (Yes/No)	No	No	Yes	No	No	No
Total (T) or Dissolved (D)	T	T	T	T	T	T
1,1,1-Trichloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,1-Dichloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,1-Dichloroethene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,2-Dichloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
1,2-Dichloropropane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
2-Butanone	<2.0	<20	<10	<2.0	<2.0	<2.0
2-Hexanone	<2.0	<20	<10	<2.0	<2.0	<2.0
4-Methyl-2-pentanone	<2.0	<20	<10	<2.0	<2.0	<2.0
Acetone	<2.0	<20	<10	<2.0	<2.0	<2.0
Benzene	<0.50	57	43	<0.50	<0.50	<0.50
Bromodichloromethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Bromoform	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Bromomethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Carbon Disulfide	<2.0	<20	<10	<2.0	<2.0	<2.0
Carbon Tetrachloride	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Chlorobenzene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Chloroethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Chloroform	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Chloromethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Dibromochloromethane	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Ethylbenzene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Methylene Chloride	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Styrene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Tetrachloroethene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Toluene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
trans-1,2-Dichloroethene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
trans-1,3-Dichloropropene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Trichloroethene	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Vinyl Acetate	<2.0	<20	<10	<2.0	<2.0	<2.0
Vinyl Chloride	<0.50	<5.0	<2.5	<0.50	<0.50	<0.50
Xylenes, Total	<0.50	150	93	<0.50	<0.50	<0.50

Note:
<# Below detection limit

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MW-21	PM-09	PM-09	PM-14
Field Sample Name	MW21QM398	PM09QM398	HA20QM398	PM14QM398
Sample Date	10/2/98	10/2/98	10/2/98	10/2/98
Duplicate (Yes/No)	No	No	Yes	No
Total (T) or Dissolved (D)	T	T	T	T
1,2,4-Trichlorobenzene	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10
2,2'-Oxybis(1-chloropropane)	<10	<10	<10	<10
2,4,5-Trichlorophenol	<10	<10	<10	<10
2,4,6-Trichlorophenol	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	<10
2,4-Dinitrophenol	<50	<50	<50	<50
2,4-Dinitrotoluene	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10
2-Methylphenol	<10	<10	<10	<10
2-Nitroaniline	<50	<50	<50	<50
2-Nitrophenol	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<20	<20	<20	<20
3-Nitroaniline	<50	<50	<50	<50
4,6-Dinitro-2-methylphenol	<50	<50	<50	<50
4-Bromophenyl phenyl ether	<10	<10	<10	<10
4-Chloro-3-methylphenol	<10	<10	<10	<10
4-Chloroaniline	<10	<10	<10	<10
4-Chlorophenyl phenyl ether	<10	<10	<10	<10
4-Methylphenol	<10	<10	<10	<10
4-Nitroaniline	<50	<50	<50	<50
4-Nitrophenol	<50	<50	<50	<50
Acenaphthene	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10
Benzo(a)anthracene	<10	<10	<10	<10
Benzo(a)pyrene	<10	<10	<10	<10
Benzo(b)fluoranthene	<10	<10	<10	<10
Benzo(g,h,i)perylene	<10	<10	<10	<10
Benzo(k)fluoranthene	<10	<10	<10	<10
Benzoic acid	<50	<50	<50	<50
Benzyl alcohol	<10	<10	<10	<10
bis(2-Chloroethoxy)methane	<10	<10	<10	<10
bis(2-Chloroethyl)ether	<10	<10	<10	<10

TABLE 5
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MW-21	PM-09	PM-09	PM-14
Field Sample Name	MW21QM398	PM09QM398	HA20QM398	PM14QM398
Sample Date	10/2/98	10/2/98	10/2/98	10/2/98
Duplicate (Yes/No)	No	No	Yes	No
Total (T) or Dissolved (D)	T	T	T	T
bis(2-Ethylhexyl)phthalate	<10	<10	<10	<10
Butyl benzyl phthalate	<10	<10	<10	<10
Chrysene	<10	<10	<10	<10
Di-n-butyl phthalate	<10	<10	<10	<10
Di-n-octyl phthalate	<10	<10	<10	<10
Dibenz(a,h)anthracene	<10	<10	<10	<10
Dibenzofuran	<10	<10	<10	<10
Diethyl phthalate	<10	<10	<10	<10
Dimethyl phthalate	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10
Hexachlorobenzene	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10
Indeno(1,2,3-cd)pyrene	<10	<10	<10	<10
Isophorone	<10	<10	<10	<10
N-Nitroso-di-n-propylamine	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<10	<10	<10
Naphthalene	<10	<10	<10	<10
Nitrobenzene	<10	<10	<10	<10
Pentachlorophenol	<50	<50	<50	<50
Phenanthrene	<10	<10	<10	<10
Phenol	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10

Note:
<# Below detection limit

Henshaw Associates, Inc

TABLE 6
RELATIVE PERCENT DIFFERENCE ANALYSIS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Concentrations in mg/L or Parts Per Million							
Well Number	**PM-09 (Total)**				**PM-09 (Dissolved)**		
Field Sample ID	PM09QM398	HA20QM398			PM09QM398F	HA20QM398F	
Sample Date	10/2/98				10/2/98		
Duplicate	No	Yes	RPD		No	Yes	RPD
Metals Analyses							
Antimony	0.0035	0.0037	6%		<0.0020	<0.0020	N/A
Arsenic	0.0094	0.0096	2%		0.0023	0.0031	30%
Beryllium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Cadmium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Chromium	0.068	0.072	6%		0.0018	0.0021	15%
Copper	0.016	0.021	27%		<0.0010	<0.0010	N/A
Lead	0.93	1.1	17%		0.0012	0.0020	50%
Mercury	0.00023	0.00023	0%		<0.00020	<0.00020	N/A
Nickel	0.061	0.067	9%		0.0037	0.0043	15%
Selenium	<0.0020	<0.0020	N/A		<0.0020	<0.0020	N/A
Silver	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Thallium	<0.0010	<0.0010	N/A		<0.0010	<0.0010	N/A
Zinc	0.36	0.41	13%		0.016	0.017	6%
Min of Abs RPD			2%				6%
Max of Abs RPD			27%				15%

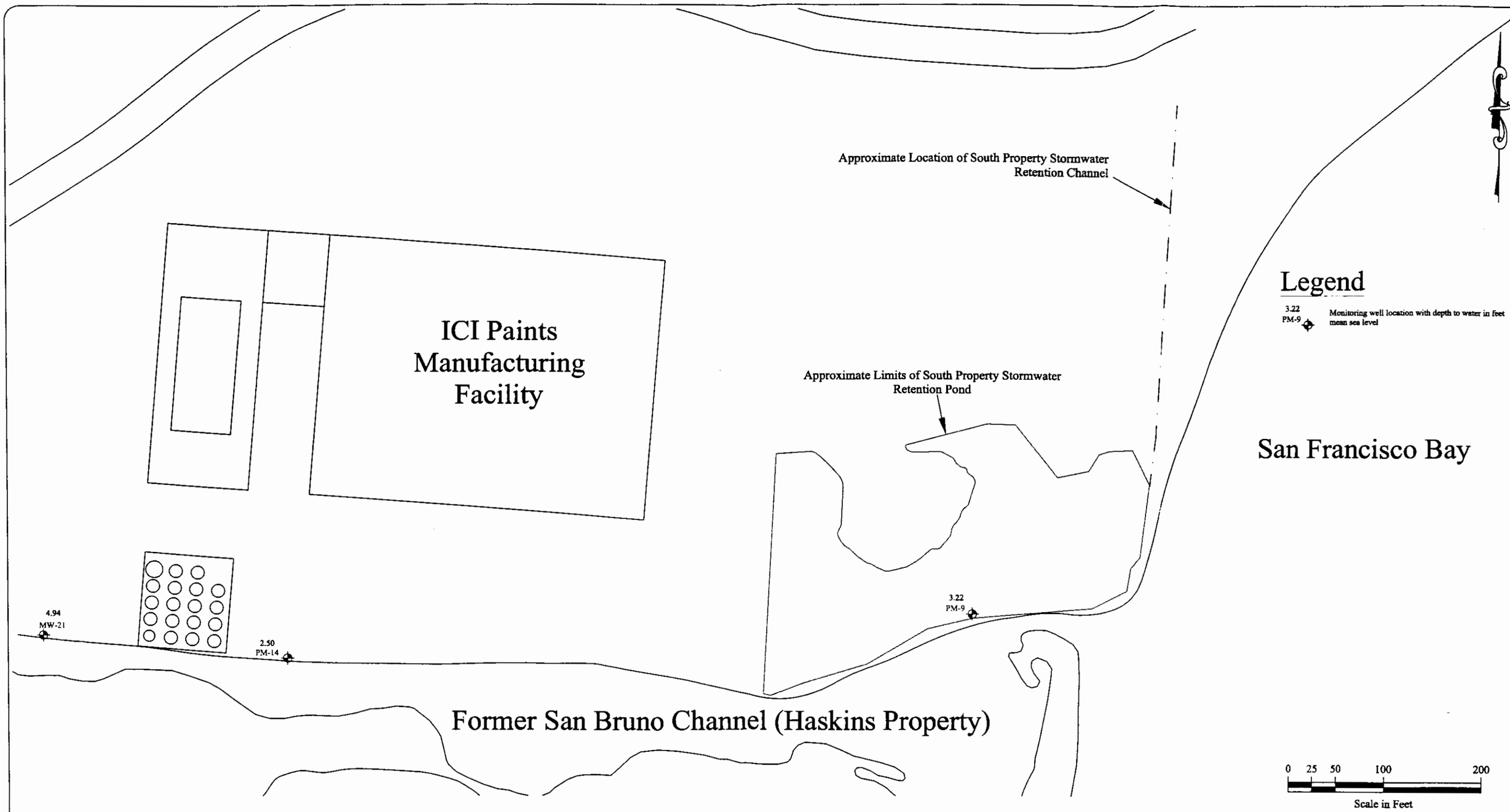
Concentrations in µg/L or Parts Per Billion			
Well Number	**PM-09**		
Field Sample ID	PM09QM398	HA20QM398	
Sample Date	10/2/98		
Duplicate	No	Yes	RPD
1,1,1-Trichloroethane	<5.0	<2.5	N/A
1,1,2,2-Tetrachloroethane	<5.0	<2.5	N/A
1,1,2-Trichloroethane	<5.0	<2.5	N/A
1,1-Dichloroethane	<5.0	<2.5	N/A
1,1-Dichloroethene	<5.0	<2.5	N/A
1,2-Dichloroethane	<5.0	<2.5	N/A
1,2-Dichloropropane	<5.0	<2.5	N/A
2-Butanone	<20	<10	N/A
2-Hexanone	<20	<10	N/A
4-Methyl-2-pentanone	<20	<10	N/A
Acetone	<20	<10	N/A
Benzene	57	43	28%
Bromodichloromethane	<5.0	<2.5	N/A
Bromoform	<5.0	<2.5	N/A
Bromomethane	<5.0	<2.5	N/A
Carbon Disulfide	<20	<10	N/A
Carbon Tetrachloride	<5.0	<2.5	N/A
Chlorobenzene	<5.0	<2.5	N/A
Chloroethane	<5.0	<2.5	N/A
Chloroform	<5.0	<2.5	N/A
Chloromethane	<5.0	<2.5	N/A
cis-1,2-Dichloroethene	<5.0	<2.5	N/A
cis-1,3-Dichloropropene	<5.0	<2.5	N/A
Dibromochloromethane	<5.0	<2.5	N/A
Ethylbenzene	<5.0	<2.5	N/A
Methylene Chloride	<5.0	<2.5	N/A
Styrene	<5.0	<2.5	N/A
Tetrachloroethene	<5.0	<2.5	N/A
Toluene	<5.0	<2.5	N/A
trans-1,2-Dichloroethene	<5.0	<2.5	N/A
trans-1,3-Dichloropropene	<5.0	<2.5	N/A
Trichloroethene	<5.0	<2.5	N/A
Vinyl Acetate	<20	<10	N/A
Vinyl Chloride	<5.0	<2.5	N/A
Xylenes, Total	150	93	47%
Min of Abs RPD			28%
Max of Abs RPD			47%

Note
<# Below detection limit
N/A Not applicable
Max Maximum
Min Minimum
Abs Absolute value
Dulicate analysis results of PM-09 samples for Semivolatile Organic Compounds were non-detect for all constituents and so do not support relative percent difference analysis
Dissolved samples were field filtered with a 0.45 micron filter
RPD Relative percent difference calculated as: (Primary Result-Duplicate Result)/(Mean of the both results). In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Shaded values represent detections at < four times the laboratory reporting limit, or sample pairs where one compound was detected and one was not detected, and are included for comparison purposes only

Henshaw Associates, Inc.

Appendix A

Laboratory Analytical Reports



No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
607 Menlo Avenue • Menlo Park, California 94025

Date:	1/7/99
Designed:	MH
Drawn:	MH
Checked:	MH
DWG file:	2238-98

PROPERTY INFORMATION
The O'Brien Corporation
450 East Grand Avenue
South San Francisco
California

Figure
1
Project
112.E.02

Invoice

Quanterra

Quanterra, Incorporated
880 Riverside Parkway
West Sacramento, CA 95605
Tel (916)373-5600
Fax (916)372-1059

REMIT TO: Quanterra, Incorporated
P.O. Box 2473
Carol Stream, IL 601322473

Number: 0032027331
Date: 23 OCT 98
Quanterra Project Number: CALLAB-301899
Customer Number: 00389773
Terms: NET 30 DAYS
Customer Contact

Bill To:
John Elliott
Henshaw Associates
607 Menlo Avenue
Menlo Park, CA 94025

John Elliott
Henshaw Associates
607 Menlo Avenue
Menlo Park, CA 94025

Line No	Qty	Matrix Code	Analysis Description	Unit Price	Extended P
			ANALYTICAL SERVICES		
			Method 8260 - Volatile Organics		
1	6	AQUEOUS	Target Compound List (TCL)	115.00	690.
			Test Surcharge (2.0%)	2.30	13.
			Method 8270 - Semivolatile Organics		
2	4	AQUEOUS	Target Compound List (TCL)	220.00	880.
			Test Surcharge (2.0%)	4.40	17.
3	4	AQUEOUS	Method 6010B/3010A - ICP Quantitative Scan	84.00	336
			Test Surcharge (2.0%)	1.68	6
4	4	AQUEOUS	Method 245.1 - Mercury, Cold Vapor AA (Total)	25.00	100
			Test Surcharge (2.0%)	0.50	2
5	4	AQUEOUS	Method 6010B - ICP Quantitative Scan	84.00	336
			Test Surcharge (2.0%)	1.68	6
6	4	AQUEOUS	Method 245.1 - Mercury, Cold Vapor AA (Dissolved)	25.00	10(
			Test Surcharge (2.0%)	0.50	2
			Analytical Services Subtotal	2490.84	
			ADDITIONAL SERVICES		
			Additional Services Subtotal	0.00	

2% surcharge applied to the analytical cost for the electronic disk deliverable (EDD).

Customer PO Number / Contract Number / Reference
112.E.01

Salesperson
Drydon

Sub Total 24
Tax 24
Total

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

October 23, 1998

QUANTERRA INCORPORATED PROJECT NUMBER: 301899
PO/CONTRACT: 112.E.01

Mike Harrison
Henshaw Associates
607 Menlo Avenue
Menlo Park, CA 94025

Dear Mr. Harrison,

This report contains the analytical results for the ten samples received under chain of custody by Quanterra Incorporated on October 5, 1998. This sample is associated with your O'Brian Properties project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916)374-4381.

Sincerely,

Jon Gildersleeve

Project Manager

Quanterra

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 301899

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Volatile Organics - Method 8260
Sample: 1, 3, 5, 7, 9, 10
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

Semi-Volatiles - Method 8270
Sample: 1, 3, 5, 7
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

Selected Metals - Total & Dissolved Various Methods
Sample: 1 - 8
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

Quanterra

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 301899

General Comments

The sample containers were received intact and in good condition.

Three of three 40 ml VOA vials of sample TB-1 (Lab Id: 301899-0009) contained air bubbles.

Three of three 40 ml VOA vials of sample TB-2 (Lab Id: 301899-0010) contained air bubbles.

Where applicable, the reporting limits are adjusted to reflect any dilutions.

The samples were prepared and analyzed within the method-specified holding time requirements.

Volatile Organics - Method 8260

The method blank, LCS, and surrogate results for this set met the specified QC criteria for acceptance.

Semi-Volatile Organics - Method 8270

The method blank, LCS, and surrogate results for this set met the specified QC criteria for acceptance, except as noted below.

Original analysis of sample (Lab Id: 301899-0001) had below limit recoveries of the surrogates Nitrobenzene-d5, 2-Fluorobiphenyl and Terphenyl-d14. Re-analysis confirmed the recoveries which are attributed to matrix.

Original analysis of sample PM09QM398 (Lab Id: 301899-0003) had below a below limit recovery of the surrogate 2-Fluorobiphenyl. Re-analysis confirmed the recovery which is attributed to matrix.

Quanterra

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 301899

Selected Metals - Total & Dissolved - Various Methods

The method blank, LCS, and surrogate results for this set met the specified QC criteria for acceptance.

There were no other anomalies associated with this project.

Quanterra

Quanterra - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Quanterra

SAMPLE DESCRIPTION INFORMATION
for
Henshaw Associates

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
301899-0001-SA	PM14QM398	AQUEOUS	02 OCT 98	14:44	05 OCT 98
301899-0002-SA	PM14QM398F	AQUEOUS	02 OCT 98	14:44	05 OCT 98
301899-0003-SA	PM09QM398	AQUEOUS	02 OCT 98	16:00	05 OCT 98
301899-0004-SA	PM09QM398F	AQUEOUS	02 OCT 98	16:00	05 OCT 98
301899-0005-SA	MW21QM398	AQUEOUS	02 OCT 98	17:30	05 OCT 98
301899-0006-SA	MW21QM398F	AQUEOUS	02 OCT 98	17:30	05 OCT 98
301899-0007-SA	HA20QM398	AQUEOUS	02 OCT 98	16:00	05 OCT 98
301899-0008-SA	HA20QM398F	AQUEOUS	02 OCT 98	16:00	05 OCT 98
301899-0009-TB	TB-1	AQUEOUS	02 OCT 98		05 OCT 98
301899-0010-TB	TB-2	AQUEOUS	02 OCT 98		05 OCT 98

Quanterra

Volatile Organics
Method 8260

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: PM14QM398
LAB ID: 301899-0001-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
I,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

(cont

Client Name: Henshaw Associates
Client ID: PM14QM398
LAB ID: 301899-0001-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Surrogate	Recovery		Acceptable Range	
Toluene-d8	100 %		85 - 111	
4-Bromofluorobenzene	103 %		81 - 117	
1,2-Dichloroethane-d4	94 %		75 - 121	

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: PM09QM398
LAB ID: 301899-0003-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 10

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	20	o
Benzene	57	ug/L	5.0	
Bromodichloromethane	ND	ug/L	5.0	
Bromoform	ND	ug/L	5.0	
Bromomethane	ND	ug/L	5.0	
2-Butanone (MEK)	ND	ug/L	20	
Carbon disulfide	ND	ug/L	20	
Carbon tetrachloride	ND	ug/L	5.0	
Chlorobenzene	ND	ug/L	5.0	
Chloroethane	ND	ug/L	5.0	
Chloroform	ND	ug/L	5.0	
Chloromethane	ND	ug/L	5.0	
Dibromochloromethane	ND	ug/L	5.0	
1,1-Dichloroethane	ND	ug/L	5.0	
1,2-Dichloroethane	ND	ug/L	5.0	
1,1-Dichloroethene	ND	ug/L	5.0	
cis-1,2-Dichloroethene	ND	ug/L	5.0	
trans-1,2-Dichloroethene	ND	ug/L	5.0	
1,2-Dichloropropane	ND	ug/L	5.0	
cis-1,3-Dichloropropene	ND	ug/L	5.0	
trans-1,3-Dichloropropene	ND	ug/L	5.0	
Ethylbenzene	ND	ug/L	5.0	
2-Hexanone	ND	ug/L	20	
Methylene chloride	ND	ug/L	5.0	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	20	
Methyl-t-butyl ether (MTBE)	ND	ug/L	20	
Styrene	ND	ug/L	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	
Tetrachloroethene	ND	ug/L	5.0	
Toluene	ND	ug/L	5.0	
1,1,1-Trichloroethane	ND	ug/L	5.0	
1,1,2-Trichloroethane	ND	ug/L	5.0	
Trichloroethene	ND	ug/L	5.0	
Vinyl acetate	ND	ug/L	20	
Vinyl chloride	ND	ug/L	5.0	

Note o = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

(cont

Client Name: Henshaw Associates
Client ID: PM09QM398
LAB ID: 301899-0003-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 10

Parameter	Result	Units	Reporting Limit	Qualifier
Xylenes (total)	150	ug/L	5.0	

Surrogate	Recovery	Acceptable Range
Toluene-d8	103 %	85 - 111
4-Bromofluorobenzene	107 %	81 - 117
1,2-Dichloroethane-d4	100 %	75 - 121

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: MW21QM398
LAB ID: 301899-0005-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
1,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

(cont

Client Name: Henshaw Associates
Client ID: MW21QM398
LAB ID: 301899-0005-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Surrogate	Recovery		Acceptable Range	
Toluene-d8	97 %		85 - 111	
4-Bromofluorobenzene	107 %		81 - 117	
1,2-Dichloroethane-d4	96 %		75 - 121	

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: HA20QM398
LAB ID: 301899-0007-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 5.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	10	o
Benzene	43	ug/L	2.5	
Bromodichloromethane	ND	ug/L	2.5	
Bromoform	ND	ug/L	2.5	
Bromomethane	ND	ug/L	2.5	
2-Butanone (MEK)	ND	ug/L	10	
Carbon disulfide	ND	ug/L	10	
Carbon tetrachloride	ND	ug/L	2.5	
Chlorobenzene	ND	ug/L	2.5	
Chloroethane	ND	ug/L	2.5	
Chloroform	ND	ug/L	2.5	
Chloromethane	ND	ug/L	2.5	
Dibromochloromethane	ND	ug/L	2.5	
1,1-Dichloroethane	ND	ug/L	2.5	
1,2-Dichloroethane	ND	ug/L	2.5	
1,1-Dichloroethene	ND	ug/L	2.5	
cis-1,2-Dichloroethene	ND	ug/L	2.5	
trans-1,2-Dichloroethene	ND	ug/L	2.5	
1,2-Dichloropropane	ND	ug/L	2.5	
cis-1,3-Dichloropropene	ND	ug/L	2.5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	
Ethylbenzene	ND	ug/L	2.5	
2-Hexanone	ND	ug/L	10	
Methylene chloride	ND	ug/L	2.5	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10	
Methyl-t-butyl ether (MTBE)	ND	ug/L	10	
Styrene	ND	ug/L	2.5	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	
Tetrachloroethene	ND	ug/L	2.5	
Toluene	ND	ug/L	2.5	
1,1,1-Trichloroethane	ND	ug/L	2.5	
1,1,2-Trichloroethane	ND	ug/L	2.5	
Trichloroethene	ND	ug/L	2.5	
Vinyl acetate	ND	ug/L	10	
Vinyl chloride	ND	ug/L	2.5	

Note o = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

(cont

Client Name: Henshaw Associates
Client ID: HA20QM398
LAB ID: 301899-0007-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 5.0

Parameter	Result	Units	Reporting Limit	Qualifier
Xylenes (total)	93	ug/L	2.5	

Surrogate	Recovery	Acceptable Range
Toluene-d8	99 %	85 - 111
4-Bromofluorobenzene	105 %	81 - 117
1,2-Dichloroethane-d4	97 %	75 - 121

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: TB-1
LAB ID: 301899-0009-TB
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
1,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

(cont.

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: TB-1
LAB ID: 301899-0009-TB
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Surrogate	**Recovery**		**Acceptable Range**	
Toluene-d8	101 %		85 - 111	
4-Bromofluorobenzene	101 %		81 - 117	
1,2-Dichloroethane-d4	96 %		75 - 121	

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

Client Name: Henshaw Associates
Client ID: TB-2
LAB ID: 301899-0010-TB
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
1,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

NA = Not Applicable
ND = Not Detected

Reported By: Michael Lucchesi

Approved By: Karin Yee

Quanterra

Volatile Organics
Target Compound List (TCL)
Method 8260

(cont.

Client Name: Henshaw Associates
Client ID: TB-2
LAB ID: 301899-0010-TB
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: NA

Received: 05 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Surrogate	Recovery		Acceptable Range	
Toluene-d8	105 %		85 - 111	
4-Bromofluorobenzene	103 %		81 - 117	
1,2-Dichloroethane-d4	104 %		75 - 121	

NA = Not Applicable

Reported By: Michael Lucchesi

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

QC LOT ASSIGNMENT REPORT - MS QC
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
301899-0001-SA	AQUEOUS	8260-A	14 OCT 98-4A	14 OCT 98-4A	
301899-0003-SA	AQUEOUS	8260-A	14 OCT 98-4A	14 OCT 98-4A	
301899-0005-SA	AQUEOUS	8260-A	14 OCT 98-4A	14 OCT 98-4A	
301899-0007-SA	AQUEOUS	8260-A	14 OCT 98-4A	14 OCT 98-4A	
301899-0009-TB	AQUEOUS	8260-A	13 OCT 98-4B	13 OCT 98-4B	
301899-0010-TB	AQUEOUS	8260-A	13 OCT 98-48	13 OCT 98-4B	

Quanterra

METHOD BLANK REPORT
Volatile Organics by GC/MS
Project: 301899

Test: 8260-TCL-LL-A Volatile Organics Target Compound List (TCL)
Method: 8260
Matrix: AQUEOUS
QC Lot: 14 OCT 98-4A QC Run: 14 OCT 98-4A
Analyzed: 14 OCT 98 Time: 17:56

Analyte	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
1,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

Surrogate	% Recovery	Acceptable Range
Toluene-d8	96	85 -111
4-Bromofluorobenzene	102	81 -117
1,2-Dichloroethane-d4	95	75 -121

ND = Not Detected

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METHOD BLANK REPORT (cont.)
Volatile Organics by GC/MS
Project: 301899

Test: 8260-TCL-LL-A Volatile Organics Target Compound List (TCL)
Method: 8260
Matrix: AQUEOUS
QC Lot: 13 OCT 98-4B QC Run: 13 OCT 98-4B
Analyzed: 13 OCT 98 Time: 21:44

Analyte	Result	Units	Reporting Limit	Qualifier
Acetone	ND	ug/L	2.0	
Benzene	ND	ug/L	0.50	
Bromodichloromethane	ND	ug/L	0.50	
Bromoform	ND	ug/L	0.50	
Bromomethane	ND	ug/L	0.50	
2-Butanone (MEK)	ND	ug/L	2.0	
Carbon disulfide	ND	ug/L	2.0	
Carbon tetrachloride	ND	ug/L	0.50	
Chlorobenzene	ND	ug/L	0.50	
Chloroethane	ND	ug/L	0.50	
Chloroform	ND	ug/L	0.50	
Chloromethane	ND	ug/L	0.50	
Dibromochloromethane	ND	ug/L	0.50	
1,1-Dichloroethane	ND	ug/L	0.50	
1,2-Dichloroethane	ND	ug/L	0.50	
1,1-Dichloroethene	ND	ug/L	0.50	
cis-1,2-Dichloroethene	ND	ug/L	0.50	
trans-1,2-Dichloroethene	ND	ug/L	0.50	
1,2-Dichloropropane	ND	ug/L	0.50	
cis-1,3-Dichloropropene	ND	ug/L	0.50	
trans-1,3-Dichloropropene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
2-Hexanone	ND	ug/L	2.0	
Methylene chloride	ND	ug/L	0.50	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	2.0	
Styrene	ND	ug/L	0.50	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	
Tetrachloroethene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
1,1,1-Trichloroethane	ND	ug/L	0.50	
1,1,2-Trichloroethane	ND	ug/L	0.50	
Trichloroethene	ND	ug/L	0.50	
Vinyl acetate	ND	ug/L	2.0	
Vinyl chloride	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	0.50	

Surrogate	% Recovery	Acceptable Range
Toluene-d8	98	85 -111
4-Bromofluorobenzene	101	81 -117
1,2-Dichloroethane-d4	93	75 -121

ND = Not Detected

Quanterra

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS
Project: 301899

Category: 8260-A 8260, Aqueous
Testcode: 8260-TCL-LL-A Method: 8260
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 14 OCT 98-4A Analyzed Date: 14 OCT 98 Time: 18:55

Analyte	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy (%) DCS1	Accuracy (%) DCS2	Limits	Precision (RPD) DCS	Precision (RPD) Limit
1,1-Dichloroethene	10.0	9.98	9.13	100	91	79-119	8.9	12
Benzene	10.0	9.67	8.94	97	89	74-114	7.8	10
Trichloroethene	10.0	9.46	8.94	95	89	72-112	5.7	13
Toluene	10.0	10.0	9.21	100	92	71-111	8.2	10
Chlorobenzene	10.0	9.97	9.28	100	93	72-112	7.2	10

Surrogate	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy(%) DCS1	Accuracy(%) DCS2	Limits
1,2-Dichloroethane-d4	10.0	10.6	10.0	106	100	75-121
Toluene-d8	10.0	10.3	9.74	103	97	85-111
4-Bromofluorobenzene	10.0	11.1	10.6	111	106	81-117

Category: 8260-A 8260, Aqueous
Testcode: 8260-TCL-LL-A Method: 8260
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 13 OCT 98-4B Analyzed Date: 13 OCT 98 Time: 22:42

Analyte	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy (%) DCS1	Accuracy (%) DCS2	Limits	Precision (RPD) DCS	Precision (RPD) Limit
1,1-Dichloroethene	10.0	9.45	9.80	94	98	79-119	3.6	12
Benzene	10.0	9.06	9.45	91	94	74-114	4.2	10
Trichloroethene	10.0	8.72	9.42	87	94	72-112	7.7	13
Toluene	10.0	9.46	9.61	95	96	71-111	1.6	10
Chlorobenzene	10.0	9.44	9.82	94	98	72-112	3.9	10

Surrogate	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy(%) DCS1	Accuracy(%) DCS2	Limits
1,2-Dichloroethane-d4	10.0	9.92	10.1	99	101	75-121
Toluene-d8	10.0	9.72	9.84	97	98	85-111
4-Bromofluorobenzene	10.0	10.6	10.6	106	106	81-117

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra

Semi-Volatile Organics
Method 8270

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM398
LAB ID: 301899-0001-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM398
LAB ID: 301899-0001-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM14QM398
LAB ID: 301899-0001-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range	
Nitrobenzene-d5	51 %	55 - 102	i
2-Fluorobiphenyl	52 %	57 - 106	i
Terphenyl-d14	62 %	63 - 110	i
Phenol-d5	21 %	10 - 67	
2-Fluorophenol	29 %	20 - 78	
2,4,6-Tribromophenol	60 %	56 - 120	

Note i = Surrogate recovery is outside of control limits.

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM398
LAB ID: 301899-0003-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

(cont.)

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM398
LAB ID: 301899-0003-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics (cont.)
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: PM09QM398
LAB ID: 301899-0003-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range	
Nitrobenzene-d5	63 %	55 - 102	
2-Fluorobiphenyl	56 %	57 - 106	i
Terphenyl-d14	72 %	63 - 110	
Phenol-d5	27 %	10 - 67	
2-Fluorophenol	37 %	20 - 78	
2,4,6-Tribromophenol	65 %	56 - 120	

Note i = Surrogate recovery is outside of control limits.

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: MW21QM398
LAB ID: 301899-0005-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 20 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

(cont.)

Client Name: Henshaw Associates
Client ID: MW21QM398
LAB ID: 301899-0005-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 20 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

(cont.

Client Name: Henshaw Associates
Client ID: MW21QM398
LAB ID: 301899-0005-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 20 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range
Nitrobenzene-d5	55 %	55 - 102
2-Fluorobiphenyl	58 %	57 - 106
Terphenyl-d14	72 %	63 - 110
Phenol-d5	28 %	10 - 67
2-Fluorophenol	31 %	20 - 78
2,4,6-Tribromophenol	65 %	56 - 120

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: HA20QM398
LA8 ID: 301899-0007-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

(cont

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: Henshaw Associates
Client ID: HA20QM398
LAB ID: 301899-0007-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

ND = Not Detected

Reported By: Dale Gimble

Approved By: Karin Yee

Quanterra

Semivolatile Organics
Target Compound List (TCL)
Method 8270

(cont.

Client Name: Henshaw Associates
Client ID: HA20QM398
LAB ID: 301899-0007-SA
Matrix: AQUEOUS
Authorized: 05 OCT 98

Sampled: 02 OCT 98
Prepared: 06 OCT 98

Received: 05 OCT 98
Analyzed: 16 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier

Surrogate	Recovery	Acceptable Range
Nitrobenzene-d5	60 %	55 - 102
2-Fluorobiphenyl	58 %	57 - 106
Terphenyl-d14	74 %	63 - 110
Phenol-d5	29 %	10 - 67
2-Fluorophenol	36 %	20 - 78
2,4,6-Tribromophenol	69 %	56 - 120

Reported By: Dale Gimble

Approved By: Karin Yee

QC LOT ASSIGNMENT REPORT - MS QC
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
301899-0001-SA	AQUEOUS	625-A	06 OCT 98-11C	06 OCT 98-11C	
301899-0003-SA	AQUEOUS	625-A	06 OCT 98-11C	06 OCT 98-11C	
301899-0005-SA	AQUEOUS	625-A	06 OCT 98-11C	06 OCT 98-11C	
301899-0007-SA	AQUEOUS	625-A	06 OCT 98-11C	06 OCT 98-11C	

Quanterra

METHOD BLANK REPORT
Semivolatile Organics by GC/MS
Project: 301899

Test: 8270CP-TCL-A Semivolatile Organics Target Compound List (TCL)
Method: 8270
Matrix: AQUEOUS
QC Lot: 06 OCT 98-11C QC Run: 06 OCT 98-11C
Analyzed: 16 OCT 98 Time: 19:13

Analyte	Result	Units	Reporting Limit	Qualifier
Acenaphthene	ND	ug/L	10	
Acenaphthylene	ND	ug/L	10	
Anthracene	ND	ug/L	10	
Benzo(a)anthracene	ND	ug/L	10	
Benzo(b)fluoranthene	ND	ug/L	10	
Benzo(k)fluoranthene	ND	ug/L	10	
Benzo(g,h,i)perylene	ND	ug/L	10	
Benzo(a)pyrene	ND	ug/L	10	
Benzoic acid	ND	ug/L	50	
Benzyl alcohol	ND	ug/L	10	
4-Bromophenyl phenyl ether	ND	ug/L	10	
Butyl benzyl phthalate	ND	ug/L	10	
4-Chloroaniline	ND	ug/L	10	
bis(2-Chloroethoxy)-methane	ND	ug/L	10	
bis(2-Chloroethyl)ether	ND	ug/L	10	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10	
4-Chloro-3-methylphenol	ND	ug/L	10	
2-Chloronaphthalene	ND	ug/L	10	
2-Chlorophenol	ND	ug/L	10	
4-Chlorophenyl phenyl ether	ND	ug/L	10	
Chrysene	ND	ug/L	10	
Dibenz(a,h)anthracene	ND	ug/L	10	
Dibenzofuran	ND	ug/L	10	
Di-n-butyl phthalate	ND	ug/L	10	
1,2-Dichlorobenzene	ND	ug/L	10	
1,3-Dichlorobenzene	ND	ug/L	10	
1,4-Dichlorobenzene	ND	ug/L	10	
3,3'-Dichlorobenzidine	ND	ug/L	20	
2,4-Dichlorophenol	ND	ug/L	10	
Diethyl phthalate	ND	ug/L	10	
2,4-Dimethylphenol	ND	ug/L	10	
Dimethyl phthalate	ND	ug/L	10	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	
2,4-Dinitrophenol	ND	ug/L	50	
2,4-Dinitrotoluene	ND	ug/L	10	
2,6-Dinitrotoluene	ND	ug/L	10	
Di-n-octyl phthalate	ND	ug/L	10	
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10	
Fluoranthene	ND	ug/L	10	
Fluorene	ND	ug/L	10	
Hexachlorobenzene	ND	ug/L	10	
Hexachlorobutadiene	ND	ug/L	10	
Hexachlorocyclopentadiene	ND	ug/L	10	
Hexachloroethane	ND	ug/L	10	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	

ND = Not Detected

Quanterra

METHOD BLANK REPORT (cont.)
Semivolatile Organics by GC/MS
Project: 301899

Test: 8270CP-TCL-A Semivolatile Organics Target Compound List (TCL)
Method: 8270
Matrix: AQUEOUS
QC Lot: 06 OCT 98-11C QC Run: 06 OCT 98-11C
Analyzed: 16 OCT 98 Time: 19:13

Analyte	Result	Units	Reporting Limit	Qualifier
Isophorone	ND	ug/L	10	
2-Methylnaphthalene	ND	ug/L	10	
2-Methylphenol	ND	ug/L	10	
4-Methylphenol	ND	ug/L	10	
Naphthalene	ND	ug/L	10	
2-Nitroaniline	ND	ug/L	50	
3-Nitroaniline	ND	ug/L	50	
4-Nitroaniline	ND	ug/L	50	
Nitrobenzene	ND	ug/L	10	
2-Nitrophenol	ND	ug/L	10	
4-Nitrophenol	ND	ug/L	50	
N-Nitrosodiphenylamine	ND	ug/L	10	
N-Nitroso-di-n-propylamine	ND	ug/L	10	
Pentachlorophenol	ND	ug/L	50	
Phenanthrene	ND	ug/L	10	
Phenol	ND	ug/L	10	
Pyrene	ND	ug/L	10	
1,2,4-Trichlorobenzene	ND	ug/L	10	
2,4,5-Trichlorophenol	ND	ug/L	10	
2,4,6-Trichlorophenol	ND	ug/L	10	

Surrogate	% Recovery	Acceptable Range
Nitrobenzene-d5	65	55 -102
2-Fluorobiphenyl	62	57 -106
Terphenyl-d14	65	63 -110
Phenol-d5	30	10 -67
2-Fluorophenol	39	20 -78
2,4,6-Tribromophenol	65	56 -120

ND = Not Detected

Quanterra

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS
Project: 301899

Category: 625-A Acid, Base and Neutrals by GC/MS.
Testcode: 8270CP-TCL-A Method: 8270
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 06 OCT 98-11C Analyzed Date: 16 OCT 98 Time: 20:27

Analyte	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy (%) DCS1	Accuracy (%) DCS2	Limits	Precision (RPD) DCS	Precision (RPD) Limit
Phenol	75.0	22.6	21.0	30	28	10-66	7.5	19
2-Chlorophenol	75.0	48.6	46.5	65	62	48-101	4.5	19
1,4-Dichlorobenzene	50.0	33.4	31.3	67	63	43-95	6.4	27
N-Nitroso-di-n-propylamine	50.0	36.0	34.8	72	70	43-98	3.3	23
1,2,4-Trichlorobenzene	50.0	34.2	32.4	68	65	46-100	5.6	24
4-Chloro-3-methylphenol	75.0	52.4	53.4	70	71	41-111	2.0	19
Acenaphthene	50.0	33.8	34.5	68	69	57-105	2.0	17
4-Nitrophenol	75.0	16.5	16.0	22	21	10-59	3.0	30
2,4-Dinitrotoluene	50.0	34.5	35.2	69	70	56-104	2.0	17
Pentachlorophenol	75.0	33.6	27.1	45	36	27-118	21	27
Pyrene	50.0	36.2	38.5	72	77	61-115	6.2	19

Surrogate	Concentration Spiked	Concentration Measured DCS1	Concentration Measured DCS2	Accuracy(%) DCS1	Accuracy(%) DCS2	Limits
Nitrobenzene-d5	50	34	32	67	64	55-102
2-Fluorobiphenyl	50	31	31	63	63	57-106
Terphenyl-d14	50	33	34	66	67	63-110
Phenol-d5	75	23	22	31	29	10-67
2-Fluorophenol	75	32	30	43	40	20-78
2,4,6-Tribromophenol	75	53	53	71	70	56-120

Calculations are performed before rounding to avoid round-off errors in calculated result

Quanterra

Selected Metals
Various Methods
Total & Dissolved

Quanterra

SAMPLE DESCRIPTION INFORMATION
for
Henshaw Associates

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
302550-0001-SA	PMI4QM398	AQUEOUS	02 OCT 98	14:44	05 OCT 98
302550-0002-SA	PM14QM398F	AQUEOUS	02 OCT 98	14:44	05 OCT 98
302550-0003-SA	PM09QM398	AQUEOUS	02 OCT 98	16:00	05 OCT 98
302550-0004-SA	PM09QM398F	AQUEOUS	02 OCT 98	16:00	05 OCT 98
302550-0005-SA	MW21QM398	AQUEOUS	02 OCT 98	17:30	05 OCT 98
302550-0006-SA	MW21QM398F	AQUEOUS	02 OCT 98	17:30	05 OCT 98
302550-0007-SA	HA20QM398	AQUEOUS	02 OCT 98	16:00	05 OCT 98
302550-0008-SA	HA20QM398F	AQUEOUS	02 OCT 98	16:00	05 OCT 98

Sample Resubmittal Form

Quanterra Incorporated - West Sacramento

Project to be resubmitted: 301699

Project Manager: Gildersleeve

Date/time of resubmittal: _____

Original Location: W17E

Resubmittal Turanaround Time: ~~TAT~~ TAT = 3 da.

New Project number: 302550

New Project location: W19E

New Project logged by: MDyan

Samples relabeled by: MDyan

ID (Project/Sample#):	Analysis Requested:	Container type(s):
301699 - 2	6020-WSAC-SCAN-AD	500 Poly HNO3
-4	↓	↓
-6	↓	↓
-8	↓	↓
-1	6020-WSAC-SCAN-AT	500 PBN
-3	↓	↓
-5	↓	↓
-7	↓	↓

Special Instructions: _____

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: PM14QM398F
Lab ID: 302550-0002-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0021	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.0017	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.0045	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.0046	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: PM09QM398F
Lab ID: 302550-0004-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0023	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.0018	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.0012	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.0037	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.016	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: MW21QM398F
Lab ID: 302550-0006-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	0.041	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.060	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	0.0032	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.0013	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.011	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	0.0034	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.047	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Dissolved)

Client Name: Henshaw Associates
Client ID: HA20QM398F
Lab ID: 302550-0008-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0031	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.0021	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.0020	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.0043	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.017	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: PM14QM398
Lab ID: 302550-0001-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0037	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.I5	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	0.019	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.026	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.23	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.053	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: PM09QM398
Lab ID: 302550-0003-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	0.0035	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0094	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.068	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	0.016	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.93	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.061	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.36	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: MW21QM398
Lab ID: 302550-0005-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	0.023	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.065	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.0021	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	0.0019	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	0.030	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.013	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.064	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

METALS

(Water - Total)

Client Name: Henshaw Associates
Client ID: HA20QM398
Lab ID: 302550-0007-SA
Matrix: AQUEOUS Sampled: 02 OCT 98 Received: 05 OCT 98
Authorized: 06 NOV 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	0.0037	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Arsenic	0.0096	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Beryllium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Cadmium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Chromium	0.072	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Copper	0.021	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Lead	1.1	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Nickel	0.067	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Selenium	ND	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98
Silver	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Thallium	ND	mg/L	0.0010	6020-M	06 NOV 98	09 NOV 98
Zinc	0.41	mg/L	0.0020	6020-M	06 NOV 98	09 NOV 98

ND = Not detected
NA = Not applicable

Reported By: Barry Votaw Approved By: Mei Lai

The cover letter is an integral part of this report.
Rev 230787

Quanterra

QC LOT ASSIGNMENT REPORT - MS QC
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
302550-0001-SA	AQUEOUS	6020-M-AT		06 NOV 98-S	06 NOV 98-S
302550-0003-SA	AQUEOUS	6020-M-AT		06 NOV 98-S	06 NOV 98-S
302550-0005-SA	AQUEOUS	6020-M-AT		06 NOV 98-S	06 NOV 98-S
302550-0007-SA	AQUEOUS	6020-M-AT		06 NOV 98-S	06 NOV 98-S
302550-0002-SA	AQUEOUS	6020-M-AD		06 NOV 98-S	06 NOV 98-S
302550-0004-SA	AQUEOUS	6020-M-AD		06 NOV 98-S	06 NOV 98-S
302550-0006-SA	AQUEOUS	6020-M-AD		06 NOV 98-S	06 NOV 98-S
302550-0008-SA	AQUEOUS	6020-M-AD		06 NOV 98-S	06 NOV 98-S

Quanterra

METHOD BLANK REPORT
Metals Analysis and Preparation
Project: 302550

Test: 6020-WSAC-SCAN-AT ICPMS Quantitative Scan (16 Total Metals)
Method: 6020-M
Matrix: AQUEOUS
QC Lot: 06 NOV 98-SX QC Run: 06 NOV 98-S
Analyzed: 09 NOV 98 Time: 19:53

Analyte	Result	Units	Reporting Limit	Qualifier
Antimony	ND	mg/L	0.0020	
Arsenic	ND	mg/L	0.0020	
Beryllium	ND	mg/L	0.0010	
Cadmium	ND	mg/L	0.0010	
Chromium	ND	mg/L	0.0010	
Copper	ND	mg/L	0.0010	
Lead	ND	mg/L	0.0010	
Nickel	ND	mg/L	0.0010	
Selenium	ND	mg/L	0.0020	
Silver	ND	mg/L	0.0010	
Thallium	ND	mg/L	0.0010	
Zinc	ND	mg/L	0.0020	

Test: 6020-WSAC-SCAN-AD ICPMS Quantitative Scan (16 Dissolved Metals)
Method: 6020-M
Matrix: AQUEOUS
QC Lot: 06 NOV 98-SX QC Run: 06 NOV 98-S
Analyzed: 09 NOV 98 Time: 19:53

Analyte	Result	Units	Reporting Limit	Qualifier
Antimony	ND	mg/L	0.0020	
Arsenic	ND	mg/L	0.0020	
Beryllium	ND	mg/L	0.0010	
Cadmium	ND	mg/L	0.0010	
Chromium	ND	mg/L	0.0010	
Copper	ND	mg/L	0.0010	
Lead	ND	mg/L	0.0010	
Nickel	ND	mg/L	0.0010	
Selenium	ND	mg/L	0.0020	
Silver	ND	mg/L	0.0010	
Thallium	ND	mg/L	0.0010	
Zinc	ND	mg/L	0.0020	

ND = Not Detected

Quanterra

LABORATORY CONTROL SAMPLE REPORT
Metals Analysis and Preparation
Project: 302550

Category: 6020-M-AT Metals by ICPMS
Test: 6020-WSAC-SCAN-AT
Matrix: AQUEOUS
QC Lot: 06 NOV 98-SX QC Run: 06 NOV 98-S
Concentration Units: mg/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Antimony	0.0500	0.0488	98	80-120
Arsenic	0.200	0.196	98	80-120
Beryllium	0.200	0.193	97	80-120
Cadmium	0.200	0.196	98	80-120
Chromium	0.200	0.201	100	80-120
Copper	0.200	0.202	101	80-120
Lead	0.200	0.193	97	80-120
Nickel	0.200	0.204	102	80-120
Selenium	0.200	0.201	100	80-120
Silver	0.0500	0.0486	97	80-120
Thallium	0.0500	0.0501	100	80-120
Zinc	0.200	0.218	109	80-120

Category: 6020-M-AD Dissolved Metals by ICPMS
Test: 6020-WSAC-SCAN-AD
Matrix: AQUEOUS
QC Lot: 06 NOV 98-SX QC Run: 06 NOV 98-S
Concentration Units: mg/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Antimony	0.0500	0.0488	98	80-120
Arsenic	0.200	0.196	98	80-120
Beryllium	0.200	0.193	97	80-120
Cadmium	0.200	0.196	98	80-120
Chromium	0.200	0.201	100	80-120
Copper	0.200	0.202	101	80-120
Lead	0.200	0.193	97	80-120
Nickel	0.200	0.204	102	80-120
Selenium	0.200	0.201	100	80-120
Silver	0.0500	0.0486	97	80-120
Thallium	0.0500	0.0501	100	80-120
Zinc	0.200	0.218	109	80-120

Calculations are performed before rounding to avoid round-off errors in calculated resul

Quanterra

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Metals Analysis and Preparation
Project: 302550

Category: 6020-M-AT Metals by ICPMS
Test : 6020-WSAC-SCAN-AT
Matrix : AQUEOUS
Sample : 302550-0008
MS Run : 06 NOV 98-S
Units : mg/L

Method: 6020-M

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPI
Antimony	ND	0.0516	0.0515	0.0500	0.0500	103	103	0.17	80-120	2
Arsenic	0.00307	0.204	0.206	0.200	0.200	101	102	1.1	80-120	2
Beryllium	ND	0.199	0.204	0.200	0.200	99	102	2.6	80-120	2
Cadmium	ND	0.185	0.184	0.200	0.200	93	92	0.71	80-120	2
Chromium	0.00207	0.234	0.234	0.200	0.200	116	116	0.04	80-120	2
Copper	ND	0.205	0.208	0.200	0.200	103	104	1.4	80-120	2
Lead	0.00203	0.177	0.179	0.200	0.200	87	88	0.88	80-120	2
Nickel	0.00431	0.219	0.222	0.200	0.200	107	109	1.3	80-120	2
Selenium	ND	0.181	0.175	0.200	0.200	90	88	3.0	80-120	2
Silver	ND	0.0464	0.0471	0.0500	0.0500	93	94	1.4	80-120	2
Thallium	ND	0.0455	0.0458	0.0500	0.0500	91	92	0.80	80-120	2
Zinc	0.0172	0.209	0.208	0.200	0.200	96	96	0.25	80-120	2

Category: 6020-M-AD Dissolved Metals by ICPMS
Test : 6020-WSAC-SCAN-AD
Matrix : AQUEOUS
Sample : 302550-0008
MS Run : 06 NOV 98-S
Units : mg/L

Method: 6020-M

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPI
Antimony	ND	0.0516	0.0515	0.0500	0.0500	103	103	0.17	80-120	
Arsenic	0.00307	0.204	0.206	0.200	0.200	101	102	1.1	80-120	
Beryllium	ND	0.199	0.204	0.200	0.200	99	102	2.6	80-120	
Cadmium	ND	0.185	0.184	0.200	0.200	93	92	0.71	80-120	
Chromium	0.00207	0.234	0.234	0.200	0.200	116	116	0.04	80-120	
Copper	ND	0.205	0.208	0.200	0.200	103	104	1.4	80-120	
Lead	0.00203	0.177	0.179	0.200	0.200	87	88	0.88	80-120	
Nickel	0.00431	0.219	0.222	0.200	0.200	107	109	1.3	80-120	
Selenium	ND	0.181	0.175	0.200	0.200	90	88	3.0	80-120	
Silver	ND	0.0464	0.0471	0.0500	0.0500	93	94	1.4	80-120	
Thallium	ND	0.0455	0.0458	0.0500	0.0500	91	92	0.80	80-120	

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Metals Analysis and Preparation
Project: 302550 (cont.)

Category: 6020-M-AD Dissolved Metals by ICPMS (cont.)
Test : 6020-WSAC-SCAN-AD Method: 6020-M
Matrix : AQUEOUS
Sample : 302550-0008
MS Run : 06 NOV 98-S (cont.)
Units : mg/L

Analyte	Concentration: Sample Result	MS Result	MSD Result	Amount Spiked: MS	MSD	%Recovery: MS	MSD	%RPD	Acceptance Limit: Recov.	RP
Zinc	0.0172	0.209	0.208	0.200	0.200	96	96	0.25	80-120	2

Calculations are performed before rounding to avoid round-off errors in calculated results.

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tody Record

Quanterra

USHAW ASSOCIATES	Project Manager: MICO HARRISON	Date: 10/2/98	Chain Of Custody Number: 42629
07 MOULD AVE	Telephone Number (Area Code)/Fax Number: 650-470-0800	Lab Number	Page 1 of 3
LOLO PARK	State: CA	Zip Code: 94025	Site Contact: KRIS LARSON
Name: O'BRIEN PROP	Carrier/Waybill Number		
ct/Purchase Order/Quote No.: 112.E.01			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: 8260 (Aromatics)	Analysis: 8270	Analysis: TPH as Diesel	Analysis: PAH's (Aromatics)	Analysis: Lead, Total and Dissolved (Filtered)
~~MW3 QM 398~~	~~10/2/98~~	~~1144~~	~~GRAB~~	~~3-40ml~~	~~VOA (GL)~~	~~3~~	~~HCl~~						
MW4 QM 398	10/2/98	1144	"	2-1L	GL	2	—			X			
~~MW4 QM 398~~	~~10/2/98~~	~~"~~	~~"~~	~~1-L~~	~~PLASTIC~~	1	~~HNO3~~				X		
MW4 QM 398F	10/2/98	"	"	1-1L	"	1	HNO_3					X	
~~MW9 QM 398~~		~~1100~~		~~3-40ml~~	~~VOA (GL)~~	~~3~~	~~HCl~~						
MW9 QM 398				2-1L	GL	2	—			X			
MW9 QM 398				1-1L	PLASTIC	1	HNO_3				X		
MW9 QM 398F				1-1L	"	1	HNO_3					X	
~~MW21 QM 398~~		~~1100~~		~~3-40ml~~	~~VOA (GL)~~	~~3~~	~~HCl~~						
MW21 QM 398				2-1L	GL	2				X			
MW21 QM 398				1-1L	PLASTIC	1	HNO_3				X		
MW21 QM 398F				1-1L	"	1	HNO_3					X	
~~MW20 QM 398~~		~~1100~~		~~3-40ml~~	~~VOA (GL)~~	~~3~~	~~HCl~~						
MW 20 QM 398				2-1L	GL	2	—			X			
MW 20 QM 398				1-1L	PLASTIC	1	HNO_3				X		
MW 20 QM 398F				1-1L	"	1	HNO_3					X	

al Instructions

ble Hazard Identification
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Around Time Required
Normal ☐ Rush

QC Level
☐ I. ☐ II. ☐ III.

Project Specific (Specify)

	Date	Time		Date	Time
linquished By	10/5/98	1133	1. Received By		
linquished By			2. Received By	10/5/98	13:21
linquished By			3. Received By		

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Quanterra

KUSHAN ASSOCIATES	Project Manager: MIKE HARRISON	Date: 10/2/98	Chain Of Custody Number: 42628
ss	Telephone Number (Area Code)/Fax Number: (650) 470-0800	Lab Number	Page 2 of 3
MENLO PARK / State: CA / Zip Code	Site Contact: KRIS LARSON		
t Name: O'BRIEN PRO PORTIES	Carrier/Waybill Number		
act/Purchase Order/Quote No.: 12.E.01			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: 8260	8270	PPM Dissolved	PPM Total
~~2MW4 QM 398~~	~~10/2/98~~	~~1444~~	~~WATER~~	~~3 40mL~~	~~VOA, PEL~~	~~6~~			X	X		X
~~2MW4 QM 398F~~	~~"~~	~~1444~~	~~"~~	~~"~~	~~"~~	~~1~~					X	
~~4MW1 QM 398~~	~~"~~	~~1730~~	~~"~~	~~"~~	~~"~~	~~6~~			X	X		X
~~4MW1 QM 398F~~	~~"~~	~~1730~~	~~"~~	~~"~~	~~"~~	~~1~~					X	
~~MA 20 QM 398~~	~~"~~	~~1600~~	~~"~~	~~"~~	~~"~~	~~6~~			X	X		X
~~MA 20 QM 398F~~	~~"~~	~~1600~~	~~"~~	~~"~~	~~"~~	~~1~~					X	
~~MW09 QM 398~~	~~"~~	~~1600~~	~~"~~	~~"~~	~~"~~	~~6~~			X	X		X
~~MW09 QM 398F~~	~~"~~	~~1600~~	~~"~~	~~"~~	~~"~~	~~1~~					X	
~~FB01~~						~~3~~			X			
TB-1	2/10/98		WATER	40mL	VOA(G)	3	HCL		X			
* 3 of 3 VOAs w/ 4-5mm air bubbles. 100598 MC.												

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months		
Turn Around Time Required: ☒ Normal ☐ Rush	QC Level: ☐ I. ☐ II. ☐ III.	Project Specific (Specify)	
Relinquished By	Date: 10/5/98 Time: 1133	1. Received By: Karen Quesada	Date: 10/5/98 Time: 1133
Relinquished By	Date	Time	2. Received By: Marc Pon Eo. Gan	Date: 100598 Time: 13:20
Relinquished By	Date	Time	3. Received By	Date	Time

Comments

[redacted]

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stody Record

Quanterra

24

'ENSHAW ASSOCIATES	Project Manager: MIKE HARRISON	Date: 10/2/98	Chain Of Custody Number: 42627
ss: 507 MENLO AVE	Telephone Number (Area Code)/Fax Number: (650) 470-0800	Lab Number:	Page 3 of 3
'ENLO PARK — State: CA — Zip Code: 94025	Site Contact: KRIS LARSON		
ct Name: 'BRIEN PROPERTIES	Carrier/Waybill Number:		
ract/Purchase Order/Quote No.: 12·E·01			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	8260 Low Level	PPM TOTAL
~~M14 QM398~~	~~10/2/98~~	~~1444~~	~~WATER~~							
~~M09 QM398~~	~~10/2/98~~	~~1600~~	~~WATER~~							
~~MW21 QM398~~	~~10/2/98~~	~~1730~~	~~WATER~~							
~~HA20 QM398~~	~~10/2/98~~	~~1600~~	~~WATER~~							
~~TB-1~~										
~~PM14 QM398 E~~										
~~PM09 O~~										
~~TB-1 (TRIP BLANKS)~~	~~10/2/98~~		~~WATER~~	~~3-40ML~~	~~VOA~~	~~3~~	~~HCL~~		~~X~~	
TB-2 " " "	10/2/98	1600	WATER	3-40ML	VOA	3	HCL		X	
HA20 QM398	10/2/98	~~1444~~	"	3-40ML	VOA	3	HCL		X	
MW21 QM398	↓	~~1600~~ 1730	"	"	"	↓	↓		X	
PM09 QM398	↓	1600	"	"	"	↓	↓		X	
PM14 QM398	↓	1444	"	"	"	↓	↓		X	
PM14 QM398	↓	1444	"	PLASTIC-1LTR		1	HNO_3			X

(*) 3 of 3 VOAs w/ 3-5 mm air bubbles.

100548 MS

cial Instructions

sible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

n Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
Relinquished By: [signature]	10/5/98	1133	1. Received By: Karen Truesdale	10/5/98	1133
Relinquished By:			2. Received By: Marla C. Garcia	100548	13:2
Relinquished By:			3. Received By:		

mments

Henshaw Associates, Inc.
Environmental Engineering Services

June 5, 1998

Mr. Thomas Kelly
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Eastern Property and Southern Property Boundary Groundwater Sampling
The O'Brien Corporation Property
450 East Grand Avenue
South San Francisco, California

Dear Mr. Kelly:

In response to the administrative order RCRA-09-89-0016 issued under the Resource Conservation and Recovery Act (RCRA) by the Environmental Protection Agency region IX (EPA), and in keeping with the Groundwater Monitoring Plan (the Workplan, Applied Environmental Strategies, 9/22/97) accepted by the EPA for The O'Brien Corporation (O'Brien) property located at 450 East Grand Avenue, South San Francisco, California (the Property), two phases of groundwater monitoring have been completed by Henshaw Associates, Inc. (Henshaw) of behalf of O'Brien. The two phases were designed to evaluate groundwater along the eastern boundary of the Property through implementation of temporary sampling points (Phase I), and along the southern boundary of the Property and the neighboring ICI Paint property through sampling existing monitoring wells (Phase II). Sample locations are presented on Figure 1.

Following our conversation of May 26, 1998, the results of the two phases of investigation have been incorporated in this concise letter format.

Site Setting

The Property is located at 450 East Grand Avenue in South San Francisco, California. The Property is located on Point San Bruno, adjacent to San Francisco Bay and the former (filled) San Bruno Channel, and approximately 1.25 miles south of Oyster Point, and two miles north of the San Francisco International Airport. The site is approximately 26 acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations at the site range from 5 to 20 feet mean sea level.

Geology

The property lies within the Santa Cruz Mountains region of the Coast Ranges geomorphic province of California. The geologic makeup of the Property consists of Franciscan Complex bedrock overlain by estuarine bay deposits and colluvium, and artificial fill. The estuarine bay deposits consist primarily of a blue-gray to black, highly plastic, silty clay commonly known as

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Bay Mud. The Bay Mud contains abundant organic material and is generally considered impermeable. The colluvium commonly consists of loose to firm, silty, sandy clay, gravel and rock debris in varying proportions. The artificial fill consists of a variable mix of sand, silt, clay, and rock, primarily derived from local sources, and is of varying thickness.

Hydrogeology

Previous site investigations (MARK, 1987, 1989) have identified three distinct hydrostratigraphic units, or hydrogeologic zones within the artificial fill, the Bay Mud and colluvial deposits, and the Franciscan Complex bedrock. The recent investigative phases have investigated the shallow water bearing zone which exists within the artificial fill and extends into the underlying Bay Mud interface. The maximum depth of temporary sampling points (TSPs) achieved during Phase I was 18 feet below ground surface (BGS). The maximum depth of the monitoring wells sampled during Phase II was 25 feet BGS.

Phase 1: Eastern Property Groundwater Sampling

Field Activities

Sampling of the Eastern Property boundary groundwater was conducted on March 10 and 11, 1998. Following discussion with Ms. Kathy Baylor of EPA, six samples were collected from TSPs located at approximate 70 foot intervals rather then from 8 locations 120 feet apart as originally proposed. This modification of the Workplan was based upon allowable working distances and the intention to appropriately characterize the eastern edge of the property. The sampling was accomplished by pushing 1.75 inch diameter drive rods to the selected depth, and placing 0.75 inch diameter dedicated PVC casing with a 5 foot screened interval within the drive rods. The drive rods were then removed, leaving the TSP to accumulate formation water. Samples were collected with stainless steel bailers, decontaminated between sample points. Initial attempts to collect discrete groundwater samples by withdrawing drive rods a short distance (1 to 2 feet) and sampling the open borehole interval failed due to extremely slow recharge rates and hole collapse. Samples collected from the TSPs were analyzed in accordance with the Workplan for dissolved priority pollutant metals (PPMs) by EPA 6000/7000, volatile organic compounds (VOCs) by EPA 8240, and semivolatile organic compounds by EPA 8270. Metals samples were transported unpreserved and were filtered in the laboratory with 5-micron filters. Field parameters were collected and are included as Table 1.

During installation of the TSPs, the underlying Franciscan bedrock was encountered at the first location chosen for sampling, proximate to the Franciscan outcrop along the northeastern edge of the Property, at a depth of 10 feet BGS. This location failed to produce water and was abandoned. After stepping out approximately 40 feet, the bedrock was again encountered at 13 feet BGS. Bedrock was not encountered during further TSP installations.

A slight sheen was observed on water collected from TSP EP-W3. Product was encountered in TSP EP-W4 at a thickness greater then a sheen, but less then an easily measurable thickness.

Temporary sample points EP-W4 and EP-W6 were very poor producing TSPs, and despite attempts to sample over two days, did not produce enough water to support complete analytical suites. Samples were collected from TSP EP-W4 and submitted for VOC and SVOC analysis.

Samples were collected from TSP EP-W6 and submitted for PPMs and VOC analysis. Following sampling, the TSP locations were abandoned by removing associated PVC casing and grouting to ground surface with Portland cement.

Analytical Results

Metals

Sample collected from TSPs and analyzed for PPMs (Table 2) were found to contain low concentrations of arsenic, lead, nickel, and zinc. The California Maximum Contaminant Level (CaMCL) of arsenic was exceeded in the sample collected from TSP EP-W5 at a concentration of 0.012 parts per million (mg/L). The Franciscan formation is known to contain elevated concentrations of arsenic. The CaMCLs for lead and zinc were exceeded in the sample collected from EP-W2 at concentrations of 0.23 mg/L and 15 mg/L respectively.

Volatile Organic Compounds

Positive results for VOCs (Table 3) including acetone, benzene, ethylbenzene, toluene, and total xylenes were received for samples collected from TSP locations EP-W2, EP-W3, and EP-W4. Acetone and Ethylbenzene were identified only in the sample collected from EP-W2 at concentrations of 2,500 parts per billion (µg/L) and 76 µg/L respectively. Benzene, toluene, and total xylenes were found in samples collected from EP-W2 and EP-W4 at concentrations of 750 µg/L, 240 µg/L, 470 µg/L; and 4,200 µg/L, 23,000 µg/L, 5,700 µg/L, respectively. Total xylenes were found in EP-W3 at 80 µg/L.

Semivolatile Organic Compounds

Semivolatile organic compounds (Table 4) including naphthalene, phenanthrene, fluorene, 2-methylnaphthalene, and hexachlorocyclopentadiene were detected in the eastern property samples. Naphthalene was detected in samples collected from EP-W2, EP-W3, and EP-W4 at concentrations of 18 µg/L, 280 µg/L, and 1,600 µg/L respectively. 2-Methylnaphthalene was detected in samples collected from EP-W3 and EP-W4 at concentrations of 36 µg/L and 920 µg/L respectively. Phenanthrene and Fluorene were detected in the sample collected from EP-W4 at concentrations of 430 µg/L and 190 µg/L respectively. Hexachlorocyclopentadiene was detected in the duplicate sample collected from EP-W5 at 17 µg/L but not in the primary sample.

Phase II: Southern Boundary Groundwater Sampling

Field Activities

Sampling of the Southern Boundary groundwater was conducted on March 26 and 27, 1998. Five monitoring wells were sampled including MW-12, MW-14, MW-21, PM-09, and PM-14. Water levels were taken on March 26, 1998 following a waiting period of approximately 45 minutes to allow the water level within the wells to stabilize. Table 5 presents well construction details and depth to water measurements. Monitoring wells MW-12, MW-14, and MW-21 were purged with dedicated pumps. Wells PM-09 and PM-14 were purged by bailer. Samples were collected from the monitoring wells when wells had achieved recovery of at least 80% of original water column height following purging of at least three well volumes with the exception of MW-21, which was purged dry. Samples were analyzed in accordance with the Workplan in the following manner: MW-21 for PPMs by EPA 6000/7000, VOCs by EPA 8240, and SVOCs by EPA 8270; PM-14 for PPMs, VOCs, and SVOCs; MW-12 for VOCs, and SVOCs; MW-14

for VOCs, and SVOCs; PM-9 for PPMs, VOCs, and SVOCs. Metals samples were field preserved unfiltered for totals analysis, and were field filtered with 5-micron filters and field preserved for dissolved analysis. Field parameters were recorded and are presented in Table 1.

Analytical Results

Metals

Arsenic was detected in the sample collected from well MW-21 at concentrations that exceed CaMCLs for total and dissolved analyses. Zinc was detected in the dissolved sample collected from MW-21 at 0.02 mg/L but not in the totals sample. Chromium, copper, nickel, and zinc were detected in PM-14. Total metals results for chromium and nickel exceeded CaMCLs with concentrations of 0.11 mg/L and 0.17 mg/L respectively. Metals results for monitoring wells are presented in Table 6.

Volatile Organic Compounds

Volatile organic compounds (Table 7) benzene and total xylenes were detected in the sample collected from PM-09 at concentrations of 90 µg/L (exceeding the CaMCL) and 430 µg/L, respectively.

Semivolatile Organic Compounds

No SVOCs (Table 8) were detected in samples collected from monitoring wells.

Quality Control Samples

No positive detections were found in equipment blank samples collected during Phase I or II. No positive detections were found in the trip blank from Phase I. Chloroform (a common laboratory contaminant) was detected in the Phase II trip blank. Relative percent difference analysis on field duplicate samples was satisfactory and is presented in Table 9.

Water Levels

Water levels were collected from monitoring wells and TSPs during Phase I and II activities, and are presented on Figure 1. Water levels from TSPs ranged from 7.5 to 12.5 feet BGS, and appeared to exhibit marked tidal influenced. Water levels from monitoring wells are presented with well construction details in Table 5. Groundwater wells sampled during Phase II activities are oriented along an east-west axis, and groundwater elevations observed did not follow an obvious east-west trend, thus no groundwater flow direction can be interpreted.

Summary

Eastern Property Groundwater Sampling

Elevated concentrations of volatile and semivolatile organic chemicals and selected metals were identified in samples collected along the eastern property boundary. Volatile and semivolatile chemicals were concentrated in the area from EP-W2 to EP-W4. Very low recharge rates were observed in the water bearing unit sampled during this investigation, and it is assumed by the level of influence exerted by the tides, that the water bearing unit is salinated.

Southern Boundary Groundwater Sampling

Low concentrations of metals were detected in water samples collected from MW-21 and PM-14. Elevated concentrations of benzene and total xylenes were detected in PM-09. These results are consistent with historic values.

Please contact me at (650) 470-0800 with any questions.

Respectfully Submitted,

Michael Harrison, P.E.
Environmental Engineer

attach:

Table 1	Field Parameters
Table 2	Metals Analytical Summary-Temporary Sample Points
Table 3	Volatile Organic Compounds Analytical Summary-Temporary Sample Points
Table 4	Semivolatile Organic Compounds Analytical Summary-Temporary Sample Points
Table 5	Well Construction Details and Water Levels
Table 6	Metals Analytical Summary-Monitoring Wells
Table 7	Volatile Organic Compounds Analytical Summary-Monitoring Wells
Table 8	Semivolatile Organic Compounds Analytical Summary-Monitoring Wells
Table 9	Relative Percent Difference Analyses
Figure 1	Property Information (Well and TSP locations with groundwater elevation/depth to groundwater information)

cc: Mr. Jerome J. Crowley Jr., The O'Brien Corporation
Patrick J. Cafferty Jr., Esq., Munger Tolles & Olsen

TABLE 1
FIELD PARAMETERS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Sample Location	Monitoring Wells				
	MW-12	MW-14	MW-21	PM-09	PM-14
Measurement Date	3/26/98	3/26/98	3/26/98	3/26/98	3/27/98
pH	8.6	8.67	8.25	7.95	6.21
Conductance (umhos/cm)	3110	2170	5190	2960	787
Temperature (°F)	59.9	60.7	65.3	60.7	61.3
Turbidity (NTU)	6.69	18.9	112	11.8	>200

Sample Location	Temporary Sample Points					
	EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W6
Measurement Date	3/10/98	3/10/98	3/10/98	3/10/98	3/10/98	3/11/98
DTW (ft. BGS)	8.20	7.52	8.20	12.50	12.30	7.62
Total Depth (ft. BGS)	13	10	10	16	18	17
pH	7.25	6.97	8.5	N/M	8.86	7.66
Conductance (umhos/cm)	2370	1361	743	N/M	1300	2300
Temperature (°F)	63.8	69.1	60.3	N/M	65.1	64.1
Turbidity (NTU)	52.8	97.6	>200	N/M	>200	10.65

Note:
>200 Turbidity of sample exceeds the measuring capacity of the turbidity meter
N/M Not measured due to observation of product in sample
BGS Below ground surface

TABLE 2
METALS ANALYTICAL SUMMARY - TEMPORARY SAMPLE POINTS

450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location	MCL	EP-W1	EP-W2	EP-W3	EP-W5	EP-W5	EP-W6	Equipment Blank
Field Sample Name		EP-W1	EP-W2	EP-W3	EP-W5	EP-W30	EP-W6	EP-W20
Sample Date		03/10/98	03/10/98	03/10/98	03/10/98	03/10/98	03/11/98	03/10/98
Duplicate		No	No	No	No	Yes	No	No
Antimony	0.006	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.05	<0.005	0.042	0.007	0.012	0.008	0.019	<0.005
Beryllium	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	0.05	<0.01	<0.01	<0.01	0.02	0.02	<0.01	<0.01
Copper	1*	<0.01	<0.01	<0.01	0.02	0.03	<0.01	<0.01
Lead	0.05	<0.04	0.23	<0.04	0.04	0.04	<0.04	<0.04
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	0.1	0.06	0.02	0.01	0.02	0.03	0.02	0.01
Selenium	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	0.1*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005
Zinc	5*	0.22	15	0.08	0.05	0.05	0.07	0.04

Note:
Samples were filtered in the laboratory with 5 micron filters
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
* Secondary California MCL

TABLE 3
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - TEMPORARY SAMPLE POINTS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W5	EP-W6	Trip Blank	Equipment Blank
Field Sample Name		EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W30	EP-W6	TB	EP-W20
Sample Date		3/10/98	3/10/98	3/10/98	3/10/98	3/10/98	3/10/98	3/10/98	3/10/98	3/10/98
Duplicate		No	No	No	No	No	Yes	No	No	No
1,1,1-Trichloroethane	200	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	1	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,1-Dichloroethene	6	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
1,2-Dichloropropane	5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
2-Butanone	NE	<100	<500	<500	<20000	<100	<100	<100	<100	<100
2-Chloroethyl Vinyl Ether	NE	<10	<50	<50	<2000	<10	<10	<10	<10	<10
2-Hexanone	NE	<50	<300	<300	<10000	<50	<50	<50	<50	<50
4-Methyl-2-pentanone	NE	<50	<300	<300	<10000	<50	<50	<50	<50	<50
Acetone	NE	<100	2,500	<500	<20000	<100	<100	<100	<100	<100
Benzene	1	<5	750	<30	4,200	<5	<5	<5	<5	<5
Bromodichloromethane	100(1)	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Bromoform	100(1)	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Bromomethane	100(1)	<10	<50	<50	<2000	<10	<10	<10	<10	<10
Carbon Disulfide	NE	<10	<50	<50	<2000	<10	<10	<10	<10	<10
Carbon Tetrachloride	0.5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Chlorobenzene	70	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Chloroethane	NE	<10	<50	<50	<2000	<10	<10	<10	<10	<10
Chloroform	100(1)	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Chloromethane	NE	<10	<50	<50	<2000	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene	6	<5	<30	<30	<1000	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.5(2)	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Dibromochloromethane	100(1)	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Ethylbenzene	700	<5	76	<30	<1000	<5	<5	<5	<5	<5
Methylene Chloride	5	<10	<50	<50	<2000	<10	<10	<10	<10	<10
Styrene	100	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Tetrachloroethene	5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Toluene	150	<5	240	<30	23,000	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	10	<5	<30	<30	<1000	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	NE	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Trichloroethene	5	<5	<30	<30	<1000	<5	<5	<5	<5	<5
Vinyl Acetate	NE	<50	<300	<300	<10000	<50	<50	<50	<50	<50
Vinyl Chloride	0.5	<10	<50	<50	<2000	<10	<10	<10	<10	<10
Xylenes, Total	1750	<10	470	80	5,700	<10	<10	<10	<10	<10

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

TABLE 4
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - TEMPORARY SAMPLE POINTS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W5	t Blank
Field Sample Name		EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W30	EP-W20
Sample Date		03/10/98	03/10/98	03/10/98	03/10/98	03/10/98	03/10/98	03/10/98
Duplicate		No	No	No	No	No	Yes	No
4-Nitroaniline	NE	<50	<50	<100	<1000	<50	<50	<50
4-Nitrophenol	NE	<50	<50	<100	<1000	<50	<50	<50
Benzyl Alcohol	NE	<20	<20	<40	<400	<20	<20	<20
4-Bromophenyl Phenyl Ethe	NE	<10	<10	<20	<200	<10	<10	<10
2,4-Dimethylphenol	NE	<10	<10	<20	<200	<10	<10	<10
4-Methylphenol	NE	<10	<10	<20	<200	<10	<10	<10
1,4-Dichlorobenzene	5	<10	<10	<20	<200	<10	<10	<10
4-Chloroaniline	NE	<20	<20	<40	<400	<20	<20	<20
Bis(2-chloroisopropyl) Ether	NE	<10	<10	<20	<200	<10	<10	<10
Phenol	NE	<10	<10	<20	<200	<10	<10	<10
Bis(2-choroethyl) Ether	NE	<10	<10	<20	<200	<10	<10	<10
Bis(2-chloroethoxy)methane	NE	<10	<10	<20	<200	<10	<10	<10
Bis(2-ethylhexyl) Phthalate	4	<10	<10	<20	<200	<10	<10	<10
Dimethyl Phthalate	NE	<10	<10	<20	<200	<10	<10	<10
Hexachlorobenzene	1	<10	<10	<20	<200	<10	<10	<10
Anthracene	NE	<10	<10	<20	<200	<10	<10	<10
1,2,4-Trichlorobenzene	70	<10	<10	<20	<200	<10	<10	<10
2,4-Dichlorophenol	NE	<10	<10	<20	<200	<10	<10	<10
2,4-Dinitrotoluene	NE	<10	<10	<20	<200	<10	<10	<10
Pyrene	NE	<10	<10	<20	<200	<10	<10	<10
Dibenzofuran	NE	<10	<10	<20	<200	<10	<10	<10
Di-n-octyl Phthalate	NE	<10	<10	<20	<200	<10	<10	<10
Benzo(g,h,i)perylene	NE	<10	<10	<20	<200	<10	<10	<10
Indeno(1,2,3-cd)pyrene	NE	<10	<10	<20	<200	<10	<10	<10
Benzo(b)fluoranthene	NE	<10	<10	<20	<200	<10	<10	<10
Fluoranthene	NE	<10	<10	<20	<200	<10	<10	<10
Benzo(k)fluoranthene	NE	<10	<10	<20	<200	<10	<10	<10
Acenaphthylene	NE	<10	<10	<20	<200	<10	<10	<10
Chrysene	NE	<10	<10	<20	<200	<10	<10	<10
Benzo(a)pyrene	0.2	<10	<10	<20	<200	<10	<10	<10
2,4-Dinitrophenol	NE	<50	<50	<100	<1000	<50	<50	<50
4,6-Dinitro-2-methylphenol	NE	<50	<50	<100	<1000	<50	<50	<50
Di-n-butyl Phthalate	NE	<10	<10	<20	<200	<10	<10	<10
1,3-Dichlorobenzene	NE	<10	<10	<20	<200	<10	<10	<10
Benzo(a)anthracene	NE	<10	<10	<20	<200	<10	<10	<10
4-Chloro-3-methylphenol	NE	<10	<10	<20	<200	<10	<10	<10
2,6-Dinitrotoluene	NE	<10	<10	<20	<200	<10	<10	<10
Naphthalene	NE	<10	18	280	1,600	<10	<10	<10
Benzoic Acid	NE	<50	<50	<100	<1000	<50	<50	<50
Hexachloroethane	NE	<10	<10	<20	<200	<10	<10	<10
4-Chlorophenyl Phenyl Ethe	NE	<10	<10	<20	<200	<10	<10	<10
Hexachlorocyclopentadiene	50	<10	<10	<20	<200	<10	17	<10

TABLE 4
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - TEMPORARY SAMPLE POINTS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W5	t Blank
Field Sample Name		EP-W1	EP-W2	EP-W3	EP-W4	EP-W5	EP-W30	EP-W20
Sample Date		03/10/98	03/10/98	03/10/98	03/10/98	03/10/98	03/10/98	03/10/98
Duplicate		No	No	No	No	No	Yes	No
Isophorone	NE	<10	<10	<20	<200	<10	<10	<10
Acenaphthene	NE	<10	<10	<20	<200	<10	<10	<10
Dibenzo(a,h)anthracene	NE	<10	<10	<20	<200	<10	<10	<10
Diethyl Phthalate	NE	<10	<10	<20	<200	<10	<10	<10
Phenanthrene	NE	<10	<10	<20	430	<10	<10	<10
Butylbenzyl Phthalate	NE	<10	<10	<20	<200	<10	<10	<10
Nitrobenzene	NE	<10	<10	<20	<200	<10	<10	<10
Fluorene	NE	<10	<10	<20	190	<10	<10	<10
Hexachlorobutadiene	NE	<10	<10	<20	<200	<10	<10	<10
Pentachlorophenol	1	<50	<50	<100	<1000	<50	<50	<50
2,4,6-Trichlorophenol	NE	<10	<10	<20	<200	<10	<10	<10
2-Nitroaniline	NE	<50	<50	<100	<1000	<50	<50	<50
2-Nitrophenol	NE	<10	<10	<20	<200	<10	<10	<10
N-Nitrosodi-n-propylamine	NE	<10	<10	<20	<200	<10	<10	<10
2-Methylnaphthalene	NE	<10	<10	36	920	<10	<10	<10
2-Chloronaphthalene	NE	<10	<10	<20	<200	<10	<10	<10
3,3'-Dichlorobenzidine	NE	<20	<20	<40	<400	<20	<20	<20
Benzidine	NE	<50	<50	<100	<1000	<50	<50	<50
2-Methylphenol	NE	<10	<10	<20	<200	<10	<10	<10
1,2-Dichlorobenzene	600	<10	<10	<20	<200	<10	<10	<10
2-Chlorophenol	NE	<10	<10	<20	<200	<10	<10	<10
2,4,5-Trichlorophenol	NE	<10	<10	<20	<200	<10	<10	<10
N-Nitrosodiphenylamine	NE	<10	<10	<20	<200	<10	<10	<10
3-Nitroaniline	NE	<50	<50	<100	<1000	<50	<50	<50

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 5
WELL CONSTRUCTION DETAILS AND WATER LEVELS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California

Well Identification	Installation Date	Total Depth (ft. BGS)	Reference Elevation (ft. MSL)	Top of Screen (ft. BGS)	Bottom of Screen (ft. BGS)	Top of Sand Pack (ft. BGS)	Bottom of Sand Pack (ft. BGS)	Casing Diameter (inch.)	Depth to Water 3/26/98 (ft. BGS)	Groundwater Elevation 3/26/98 (ft. MSL)
MW-12	1/10/87	15.5	13.02	5.0	15.0	4.0	15.0	4	8.65	4.37
MW-14	1/11/87	15.0	14.04	5.0	15.0	3.5	15.0	4	9.98	4.06
MW-21	9/2/87	25.0	12.24	13.0	25.0	10.0	25.0	4	6.89	5.35
PM-09	8/28/87	25.0	10.07	8.0	13.0	5.0	13.5	2	4.13	5.94
PM-14	12/10/93	12.0	9.35	7.0	12.0	6.0	10.0	2	3.20	6.15

Note:
BGS Below ground surface
MSL Mean sea level

TABLE 6
METALS ANALYTICAL SUMMARY - MONITORING WELLS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Sample Location	MCL	MW-21	MW-21	PM-09	PM-09	PM-14	PM-14	PM-14	PM-14	Equipment Blank	Equipment Blank
Field Sample Name		MW-21	MW-21F	PM9	PM9F	PM 14	PM 14D	PM 14F	PM 14DF	EB-1	EB-1F
Sample Date		3/26/98	3/26/98	3/26/98	3/26/98	3/27/98	3/27/98	3/27/98	3/27/98	3/26/98	3/26/98
Duplicate		No	No	No	No	No	Yes	No	Yes	No	No
Total (T) or Dissolved (D)		T	D	T	D	T	T	D	D	T	D
Antimony	0.006	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.05	0.15	0.13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Beryllium	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	0.05	<0.01	<0.01	<0.01	<0.01	0.10	0.11	<0.01	0.03	<0.01	<0.01
Copper	1*	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Mercury	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	0.1	<0.01	<0.01	<0.01	<0.01	0.15	0.17	0.02	0.04	<0.01	<0.01
Selenium	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	0.1*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	0.002	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	5*	<0.01	0.02	<0.01	<0.01	0.03	0.03	<0.01	<0.01	<0.01	<0.01

Note:
<# Below detection limit
Dissolved samples were field filtered with a 5 micron filter
MCL California Maximum Contaminant Level unless otherwise noted
* Secondary California MCL

TABLE 7
VOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - MONITORING WELLS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-12	MW-14	MW-21	PM-09	PM-14	PM-14	Trip Blank	Equipment Blank
Field Sample Name		MW-12	MW-14	MW-21	PM9	PM 14	PM 14D	TB1	EB-1
Sample Date		3/26/98	3/26/98	3/26/98	3/26/98	3/27/98	3/27/98	3/27/98	3/26/98
Duplicate		No	No	No	No	No	Yes	No	No
1,1,1-Trichloroethane	200	<5	<5	<5	<30	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	1	<5	<5	<5	<30	<5	<5	<5	<5
1,1,2-Trichloroethane	5	<5	<5	<5	<30	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	<5	<5	<30	<5	<5	<5	<5
1,1-Dichloroethene	6	<5	<5	<5	<30	<5	<5	<5	<5
1,2-Dichloroethane	0.5	<5	<5	<5	<30	<5	<5	<5	<5
1,2-Dichloropropane	5	<5	<5	<5	<30	<5	<5	<5	<5
2-Butanone	NE	<100	<100	<100	<500	<100	<100	<100	<100
2-Chloroethyl Vinyl Ether	NE	<10	<10	<10	<50	<10	<10	<10	<10
2-Hexanone	NE	<50	<50	<50	<300	<50	<50	<50	<50
4-Methyl-2-pentanone	NE	<50	<50	<50	<300	<50	<50	<50	<50
Acetone	NE	<100	<100	<100	<500	<100	<100	<100	<100
Benzene	1	<5	<5	<5	90	<5	<5	<5	<5
Bromodichloromethane	100(1)	<5	<5	<5	<30	<5	<5	<5	<5
Bromoform	100(1)	<5	<5	<5	<30	<5	<5	<5	<5
Bromomethane	100(1)	<10	<10	<10	<50	<10	<10	<10	<10
Carbon Disulfide	NE	<10	<10	<10	<50	<10	<10	<10	<10
Carbon Tetrachloride	0.5	<5	<5	<5	<30	<5	<5	<5	<5
Chlorobenzene	70	<5	<5	<5	<30	<5	<5	<5	<5
Chloroethane	NE	<10	<10	<10	<50	<10	<10	<10	<10
Chloroform	100(1)	<5	<5	<5	<30	<5	<5	10	<5
Chloromethane	NE	<10	<10	<10	<50	<10	<10	<10	<10
cis-1,2-Dichloroethene	6	<5	<5	<5	<30	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.5(2)	<5	<5	<5	<30	<5	<5	<5	<5
Dibromochloromethane	100(1)	<5	<5	<5	<30	<5	<5	<5	<5
Ethylbenzene	700	<5	<5	<5	<30	<5	<5	<5	<5
Methylene Chloride	5	<20	<20	<20	<70	<10	<10	<10	<20
Styrene	100	<5	<5	<5	<30	<5	<5	<5	<5
Tetrachloroethene	5	<5	<5	<5	<30	<5	<5	<5	<5
Toluene	150	<5	<5	<5	<30	<5	<5	<5	<5
trans-1,2-Dichloroethene	10	<5	<5	<5	<30	<5	<5	<5	<5
trans-1,3-Dichloropropene	NE	<5	<5	<5	<30	<5	<5	<5	<5
Trichloroethene	5	<5	<5	<5	<30	<5	<5	<5	<5
Vinyl Acetate	NE	<50	<50	<50	<300	<50	<50	<50	<50
Vinyl Chloride	0.5	<10	<10	<10	<50	<10	<10	<10	<10
Xylenes, Total	1750	<10	<10	<10	430	<10	<10	<10	<10

Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
(1) Federal MCL as sum of total trihalomethanes including bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform)
(2) MCL is listed for 1,3-Dichloropropene and is not isomer specific
NE Not established

TABLE 8
SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - MONITORING WELLS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-12	MW-14	MW-21	PM-09	PM-14	PM-14	Equipment Blank
Field Sample Name		MW-12	MW-14	MW-21	PM9	PM 14	PM 14D	EB-1
Sample Date		3/26/98	3/26/98	3/26/98	3/26/98	3/27/98	3/27/98	3/26/98
Duplicate		No	No	No	No	No	Yes	No
4-Nitroaniline	NE	<50	<50	<50	<50	<50	<50	<50
4-Nitrophenol	NE	<50	<50	<50	<50	<50	<50	<50
Benzyl Alcohol	NE	<20	<20	<20	<20	<20	<20	<20
4-Bromophenyl Phenyl Ether	NE	<10	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	NE	<10	<10	<10	<10	<10	<10	<10
4-Methylphenol	NE	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	5	<10	<10	<10	<10	<10	<10	<10
4-Chloroaniline	NE	<20	<20	<20	<20	<20	<20	<20
Bis(2-chloroisopropyl) Ether	NE	<10	<10	<10	<10	<10	<10	<10
Phenol	NE	<10	<10	<10	<10	<10	<10	<10
Bis(2-choroethyl) Ether	NE	<10	<10	<10	<10	<10	<10	<10
Bis(2-chloroethoxy)methane	NE	<10	<10	<10	<10	<10	<10	<10
Bis(2-ethylhexyl) Phthalate	4	<10	<10	<10	<10	<10	<10	<10
Di-n-octyl Phthalate	NE	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	1	<10	<10	<10	<10	<10	<10	<10
Anthracene	NE	<10	<10	<10	<10	<10	<10	<10
1,2.4-Trichlorobenzene	70	<10	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	NE	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	NE	<10	<10	<10	<10	<10	<10	<10
Pyrene	NE	<10	<10	<10	<10	<10	<10	<10
Dimethyl Phthalate	NE	<10	<10	<10	<10	<10	<10	<10
Dibenzofuran	NE	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)perylene	NE	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)pyrene	NE	<10	<10	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	NE	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	NE	<10	<10	<10	<10	<10	<10	<10
Benzo(k)fluoranthene	NE	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	NE	<10	<10	<10	<10	<10	<10	<10
Chrysene	NE	<10	<10	<10	<10	<10	<10	<10
Benzo(a)pyrene	0.2	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrophenol	NE	<50	<50	<50	<50	<50	<50	<50
4,6-Dinitro-2-methylphenol	NE	<50	<50	<50	<50	<50	<50	<50
Dibenzo(a,h)anthracene	NE	<10	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	NE	<10	<10	<10	<10	<10	<10	<10
Benzo(a)anthracene	NE	<10	<10	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol	NE	<10	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	NE	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodi-n-propylamine	NE	<10	<10	<10	<10	<10	<10	<10
Benzoic Acid	NE	<50	<50	<50	<50	<50	<50	<50
Hexachloroethane	NE	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenyl Phenyl Ether	NE	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	50	<10	<10	<10	<10	<10	<10	<10
Isophorone	NE	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	NE	<10	<10	<10	<10	<10	<10	<10
Diethyl Phthalate	NE	<10	<10	<10	<10	<10	<10	<10
Di-n-butyl Phthalate	NE	<10	<10	<10	<10	<10	<10	<10

TABLE 8

SEMIVOLATILE ORGANIC COMPOUNDS ANALYTICAL SUMMARY - MONITORING WELLS

450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in µg/L or Parts Per Billion

Sample Location	MCL	MW-12	MW-14	MW-21	PM-09	PM-14	PM-14	Equipment Blank
Field Sample Name		MW-12	MW-14	MW-21	PM9	PM 14	PM 14D	EB-1
Sample Date		3/26/98	3/26/98	3/26/98	3/26/98	3/27/98	3/27/98	3/26/98
Duplicate		No	No	No	No	No	Yes	No
Phenanthrene	NE	<10	<10	<10	<10	<10	<10	<10
Butylbenzyl Phthalate	NE	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	NE	<10	<10	<10	<10	<10	<10	<10
Fluorene	NE	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	NE	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	1	<50	<50	<50	<50	<50	<50	<50
2,4.6-Trichlorophenol	NE	<10	<10	<10	<10	<10	<10	<10
2-Nitroaniline	NE	<50	<50	<50	<50	<50	<50	<50
2-Nitrophenol	NE	<10	<10	<10	<10	<10	<10	<10
Naphthalene	NE	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	NE	<10	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	NE	<10	<10	<10	<10	<10	<10	<10
3,3-Dichlorobenzidine	NE	<20	<20	<20	<20	<20	<20	<20
Benzidine	NE	<50	<50	<50	<50	<50	<50	<50
2-Methylphenol	NE	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	600	<10	<10	<10	<10	<10	<10	<10
2-Chlorophenol	NE	<10	<10	<10	<10	<10	<10	<10
2,4.5-Trichlorophenol	NE	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	NE	<10	<10	<10	<10	<10	<10	<10
3-Nitroaniline	NE	<50	<50	<50	<50	<50	<50	<50

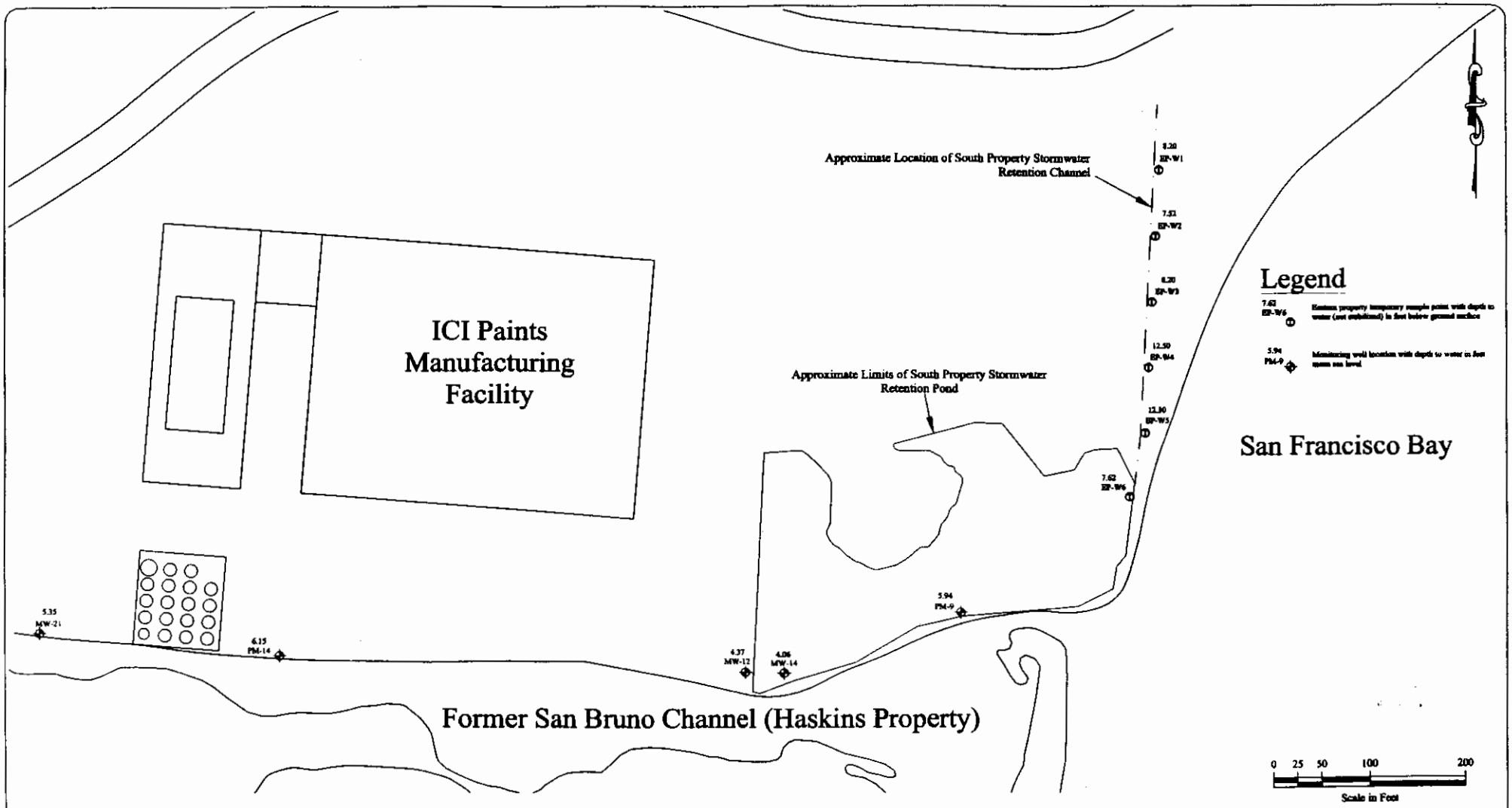
Note:
<# Below detection limit
MCL California Maximum Contaminant Level unless otherwise noted
NE Not established

TABLE 9
RELATIVE PERCENT DIFFERENCE ANALYSIS
450 East Grand Avenue
The O'Brien Corporation
South San Francisco, California
Concentrations in mg/L or Parts Per Million

Well Number	PM-14 (Total)				PM-14 (Dissolved)		
Field Sample ID	PM 14	PM 14D			PM 14F	PM 14DF	
Sample Date	3/27/98				3/27/98		
Duplicate	No	Yes	RPD		No	Yes	RPD
Metals Analyses							
Antimony	<0.02	<0.02	N/A		<0.02	<0.02	N/A
Arsenic	<0.005	<0.005	N/A		<0.005	<0.005	N/A
Beryllium	<0.002	<0.002	N/A		<0.002	<0.002	N/A
Cadmium	<0.005	<0.005	N/A		<0.005	<0.005	N/A
Chromium	0.1	0.11	-10%		<0.01	0.03	-57%
Copper	0.01	0.01	0%		<0.01	<0.01	N/A
Lead	<0.04	<0.04	N/A		<0.04	<0.04	N/A
Mercury	<0.0002	<0.0002	N/A		<0.0002	<0.0002	N/A
Nickel	0.15	0.17	-13%		0.02	0.04	-67%
Selenium	<0.01	<0.01	N/A		<0.01	<0.01	N/A
Silver	<0.005	<0.005	N/A		<0.005	<0.005	N/A
Thallium	<0.05	<0.05	N/A		<0.05	<0.05	N/A
Zinc	0.03	0.03	0%		<0.01	<0.01	N/A
Min of Abs RPD			10%				57%
Max of Abs RPD			13%				67%

Sample Location					EP-W5 (Dissolved)		
Field Sample ID					EP-W5	EP-W30	
Sample Date					03/10/98		
Duplicate					No	Yes	RPD
Metals Analyses							
Antimony					<0.02	<0.02	N/A
Arsenic					0.012	0.008	40%
Beryllium					<0.002	<0.002	N/A
Cadmium					<0.005	<0.005	N/A
Chromium					0.02	0.02	0%
Copper					0.02	0.03	-40%
Lead					0.04	0.04	0%
Mercury					<0.0002	<0.0002	N/A
Nickel					0.02	0.03	-40%
Selenium					<0.01	<0.01	N/A
Silver					<0.005	<0.005	N/A
Thallium					<0.005	<0.005	N/A
Zinc					0.05	0.05	0%
Min of Abs RPD							0%
Max of Abs RPD							40%

Note:
<# Below detection limit
N/A Not applicable
RPD Relative percent difference calculated as: (Primary Result-Duplicate Result)/(Mean of the both results) In cases where one duplicate result returns a non-detection, RPD values are calculated using the reported detection limit
Max Maximum
Min Minimum
Abs Absolute value
Dulicate analysis results of PM-14 samples for Volatile Organic Compounds and Semivolatile Organic Compounds were non-detect for all constituents and do not support relative percent difference analysis
Dulicate analysis results of EP-W5 samples for Volatile Organic Compounds and Semivolatile Organic Compounds were non-detect for all constituents (except for hexachlorocyclopentadiene detected only in the duplicate sample) and do not support relative percent difference analysis
Dissolved samples collected from monitoring wells were field filtered with a 5 micron filter. Dissolved samples from TSPs (EP samples) were laboratory filtered with 5 micron filters
Per SW-846, duplicate samples must have a Relative Percent Difference (RPD) of < 20%. if both the original and the duplicate are > four times the laboratory reporting limit
Shaded values represent detections at < four times the laboratory reporting limit and are included for comparison purposes only



No.	Date	Revision	Approved

Henshaw Associates, Inc.
Environmental Engineering Services
607 Menlo Avenue • Menlo Park, California 94025

Date:	6/5/98
Designed:	MH
Drawn:	MH
Checked:	JB
DWG file:	2019-98

PROPERTY INFORMATION
The O'Brien Corporation
450 East Grand Avenue
South San Francisco
California

Figure
1
Project
112.E.02

A15

VF 06-13-95

Jenkins, Sanders & Associates

Environmental Consultants

Jenkins, Sanders & Associates

Environmental Consultants

June 13, 1995

Patricia Houle
C/O Tom Kelly H-3-1
EPA
75 Hawthorne
San Francisco, CA 94105

Re: Biological Evaluation of the Fuller O'Brien Paint Facility

Dear Ms. Houle:

Enclosed find two (2) copies of the Draft Report documents titled " Biological Evaluation of the Fuller O'Brien Paint Facility." If you have any further questions, please do not hesitate to call.

Very truly yours,

Kenneth D. Jenkins, Ph.D.

Attachments
Via Federal Express

4320 Atlantic Avenue, Suite 216, Long Beach, CA 90807 Tel: (310) 492-9395 Fax: (310) 426-9787
23679 Calabasas Rd., Suite 200, Calabasas, CA 91302 Tel: (818) 710-8545 Fax: (818) 704-7358

BIOLOGICAL EVALUATION
OF THE
FULLER-O'BRIEN
PAINT FACILITY

Draft Report

Prepared for:
O'Brien Corporation
395 Oyster Point Blvd, Suite 350
South San Francisco, CA

Prepared by:
Jenkins, Sanders & Associates
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Executive Summary

This preliminary biological evaluation was designed to gather data to allow an initial characterization of the biological setting of the Fuller-O'Brien Paint manufacturing facility at Oyster Point (the Site) and areas of potential biological importance immediately adjacent to the Site. The O'Brien facility is located at 450 East Grand Avenue in South San Francisco, CA (Figure 1). The approximately 28-acre site has been used as a paint manufacturing facility for over 100 years. The Site is bounded by commercial properties on the north and west, and the San Francisco Bay (the Bay) on the east. Prior to 1965 the area south of the Site was part of the San Francisco Bay and used as a deep water shipping channel called the San Bruno Channel. It was filled for commercial development between the mid-1960s and mid-1970s and a tidal channel and marginal wetland has developed in this fill area. At the head of the narrow channel there is a large City of South San Francisco storm drain which discharges surface rain runoff and dry weather urban runoff (Mark Group, 1989).

Three areas of potential ecological importance were identified based on historic data and preliminary site visits: (1) the marginal wetland located immediately to the south of the Site; (2) the mudflat on the Bay immediately to the east; and (3) the grassy upland area in the northwest portion of the Site. These areas and the remainder of the Site were evaluated for habitat availability and utilization by potential receptors (fishes, birds, mammals, etc.). In addition, possible utilization by Federal and/or State threatened, endangered, and candidate species and/or other species of special concern was examined. These data were used to identify sensitive habitats and probable exposure pathways for use in conducting a subsequent Ecological Risk Assessment.

The biological and ecological data were integrated with available data on soil chemistry, groundwater chemistry and hydrology to provide an overview of the relationships between potential contaminant sources, migration pathways and receptor species. Limited additional sampling and chemical analysis was carried out as part of the ongoing RFI in order to provide more information on the areas of potential biological sensitivity. The results of the studies for each of the three areas of potential ecological concern are summarized below.

Marginal Wetlands

Biological Setting

The marginal wetland to the south of the Site varies from freshwater marsh vegetation near the storm drain to full tidal marsh vegetation near the mouth of the narrow channel. Although the wetland was only recently established, it should have a relatively natural benthic invertebrate community. The narrow channel would be used seasonally by smaller fish preferring lower salinities.

Only twelve species of birds were seen during the two-day survey in the marginal wetland habitat. The tidally influenced part of this wetland was very small with respect to other types of similar habitat throughout San Francisco Bay, which may contribute to the low number of species seen. Overall, the marginal wetland appears to be of limited importance for waterbirds. The riparian-freshwater habitat, inland from the brackish marsh, was used more extensively by passerine birds but appeared to be a habitat island within a heavily industrial area. Because of habitat isolation and fragmentation in the vicinity of the Site, many species which otherwise might be able to utilize these areas or which might pass through from more suitable habitat are most likely absent from the Site.

The marginal wetland appears to have a low diversity of mammals due to its small size, linear shape, isolation in an urbanized and industrialized area and lack of wildlife corridors. Opossum (*Didelphis virginianus*) and raccoon (*Procyon lotor*), which appear to be resident on the upland portion of the Site, may enter the area to forage. The Site is located in the southeastern portion of Point San Bruno and there appears to be patches of natural appropriate habitat in Point San Bruno sufficiently large to support populations of these omnivorous mammals. However, it is uncertain whether wildlife corridors connecting the Site to larger patches of habitat are present. California ground squirrels (*Spermophilus beecheyi*) and large numbers of their burrows were observed in the fill to the south of the wetland. However, ground squirrels rarely, if ever, enter wetlands to forage.

Special status species which might be able to utilize the marginal wetland include the California clapper rail (*Rallus longirostris obsoletus*) and the salt marsh harvest mouse (*Reithrodontomys raviventris*). However, these species were not observed during the site visits and are unlikely to be present because of limited suitable habitat, lack of access and recent creation of the habitat.

Potential Sources of Contamination

The marginal wetland is adjacent to three Solid Waste Management Units (SWMUs) of the Fuller O'Brien Site which represent potential sources of heavy metal and organic contamination. There are also several potential off-Site sources of contamination including: the storm drain which discharges into the west end of the wetland; the fill materials to the South of the wetland; and the Bay. Several studies have confirmed elevated concentrations of lead in the sediments of the central portion of the marsh and preliminary sampling during this study suggests low levels of organic contamination near the mouth of the marsh. Recent studies indicate that the most likely source of this lead is the fill material located just south of the marginal wetland.

Mudflats

Biological Setting

The eastern boundary of the Site is protected by a revetment of concrete pieces and rocks which drops off to mudflats bounding the western shore of San Francisco Bay. These mudflats are relatively steep and have reduced tidal flow. These types of mudflats typically support large populations of burrowing organisms and deposit feeders. A number of fish species commonly occur on mudflats in San Francisco Bay including several species of goby, northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), shiner surfperch (*Cymatogaster aggregata*) and starry flounder (*Platichthys stellatus*). Other species of flatfishes, as well as large mid-water predators, such as striped bass (*Morone saxatilis*), would also move onto the mudflats to feed at high tides.

Several common shorebirds such as western sandpiper (*Calidris mauri*), willet (*Catoptrophorus semitalmatus*) and whimbrel (*Numenius phaeopus*) were seen, as were several species of gulls, including western gull (*Larus occidentalis*) and herring gull (*Larus argentatus*). Utilization of the mudflats by shorebirds was limited compared to other areas in the Bay, perhaps due to the relatively steep slope of these mudflats. Two snowy plovers, federally listed as a threatened species, were also sighted. The mudflats are adequate foraging and resting areas for these shorebirds, but do not provide any nesting habitat. The opossum and raccoon, which appear to be resident on the upland portion of the Site, are known to forage in the intertidal and would be expected to do so on this Site.

Potential Sources of Contamination

The mudflats are adjacent to the Eastern Properties which are part of one of the SWMUs of the Fuller O'Brien Site. This SWMU represents a potential source of heavy metal and organic contamination. Other potential sources of contamination include the properties to the north of the Site and the Bay. Preliminary sampling during this study suggests low levels of organic and metal contamination near the mouth of the marsh.

Upland Habitat

Biological Setting

Degraded upland habitat was present north of the building complex. This habitat consisted of a flat area with two small fresh water wetland with cattails and other typical marsh plants. It was bounded to the north, west and east by steep slopes. One very small wetland results from the discharge from a pipe running just north of the former tank farm area above the east slope of the upland. This wetland was surrounded by small cattails (*Typha* sp.) and had a

small area of open water (approximately one meter diameter by 15 cm deep). The other wetland was near the center of the upland flat and north/northwest of the water tank. This wetland was supported by a larger discharge of water from a pipe apparently draining the Genetech parking lot above the north slope of the upland area. The wetland was densely overgrown with cattails and had little open water. Scattered willows (*Salix* sp.) to four meters high grew throughout the wetland. Clumps of pampas grass also occurred around the margin of the wetland. Beyond the pampas grass the vegetation immediately changed to upland species without a transition zone of more mesic vegetation.

No reptiles or amphibians were observed in the disturbed upland habitat during a reconnaissance trip to the Site. Eight species of birds were seen utilizing the upland habitat during the two-day survey and two species were observed flying over the area. However, this area seems to be fairly unproductive for birds. The only small mammal observed during the field survey was the California ground squirrel. Their burrows were abundant throughout the disturbed upland habitat as were pocket gopher (*Thomomys bottae*) burrows and mounds. The presence of droppings, many empty snail shell and trails through the dense cattails indicate that opossum forage in the larger wetland. Raccoon and stripped skunk (*Mehpitis mephitis*) have probably maintained small populations in the unindustrialized pockets of upland around Point San Bruno.

One golden eagle (*Aquila chrysaetos*), a federally and state listed Endangered Species, was observed both days of the Site survey either foraging over Oyster Point or resting on power poles adjacent to the Site. Golden eagles are considered to be vagrants in the San Francisco Bay area. The San Francisco owl's-clover (*Triphysaria floribunda*), a federal Category 2 species and California Native Plant Society (CNPS) Category 1b species, is reported as a non-specific occurrence at Point San Bruno. This species was not observed during the Site survey. Although early winter is not a good time to observe this small species, it is very unlikely that the species occurs on the highly disturbed upland portion of the Site.

Potential Sources of Contamination

The upland habitat is adjacent to the Former Tank Farm Area of one of the SWMUs of the Fuller O'Brien Site, however, there is no evidence of releases into this area. The storm drains which serve as sources of water for the two small wetlands represent more likely sources of contamination. These pipes appear to drain the roads and paring lots above the Fuller O'Brien Site. Low concentrations of chloroform were detected in water from the eastern-most drain.

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1 Introduction

1.1 Site Background

1.1.1 Site Location and History

The Fuller-O'Brien Paint manufacturing facility is located at 450 East Grand Avenue in South San Francisco, California (Figure 1). The approximately 28-acre site (the Site) is bounded by commercial properties on the north and west, San Francisco Bay (the Bay) on the east and by marginal wetlands on the south. The Site has been used as a paint manufacturing facility for over 100 years; the O'Brien Corporation (O'Brien) has been operating the facility since 1967 and purchased the property in 1970.

In years of intensive industrial activity, virtually all of the upland habitat north of the Site has been extensively altered or removed. The Bay mudflats to the east are relatively undisturbed. Prior to 1965 the area south of the O'Brien fence line was a deep water shipping channel called the San Bruno Channel. It was filled for commercial development by Arthur Haskins, a private owner and contractor, from the mid 1960s to the mid 1970s. The approximately 3.5 million cubic yards of imported fill used was from industrial and construction debris and sand. Since the mid 1970s, a small tidal channel and marginal wetland has developed in the interface between the fill area and the Site (Figure 1). At the head of the narrow channel there is a large City of South San Francisco storm drain which discharges surface rain runoff and dry weather urban runoff (Mark Group, 1989).

1.1.2 Previous Investigations

Several environmental investigations have been performed for O'Brien since 1982. These studies are summarized in Section 1.3 of the *Draft Report for Phase II RCRA Facility*

Investigation (RFI) Fuller O'Brien Paint Facility (Harza, 1994). The focus for these studies has been the hydrology of the Site and the chemistry of the soils, sediments, and ground and surface waters in and around the Site. Contaminants seen include a variety of metals, volatile organic compounds (VOCs) and semi-volatile organic compounds (SOCs); contaminants were found at several different areas of concern, which include three Solid Waste Management Units (SWMUs). These areas of concern are discussed below in Section 4.1.

1.2 Purpose of the Study

This preliminary biological evaluation was designed to gather data for an initial characterization of the biological setting of the O'Brien facility at Oyster Point (the Site) and areas of potential biological importance immediately adjacent to the Site. Three areas of potential ecological importance are discussed and evaluated: (1) the marginal wetland located immediately to the south of the Site; (2) the mudflat on the Bay immediately to the east; and (3) the grassy upland area in the northwest portion of the Site. These areas and the remainder of the Site were evaluated for habitat availability and utilization by potential receptor species (fishes, birds, mammals, etc.). In addition, possible utilization by Federal and/or State threatened, endangered, and candidate species and/or other species of special concern was examined. These data were used to identify sensitive habitats and probable exposure pathways for use in developing a conceptual model of the Site for a subsequent Ecological Risk Assessment. The biological and ecological data are integrated with available data on soil chemistry, groundwater chemistry and hydrology to provide an overview of the relationships between potential contaminant sources, migration pathways and receptor species. Additional sampling was carried out as part of the Phase II RFI in order to provide more information on the areas of potential biological sensitivity.

1.2.1 Regional Geographic Setting

The Site is located on the west side of the San Francisco Bay in San Mateo County, California, at 122 22' 30" Latitude and 37 39' Longitude, and is mapped on the U.S. Geological Survey, San Francisco South 7.5 minute quadrangle. The original site was located in upland habitat on the southeastern corner of Point San Bruno and was bounded by mudflats of the Bay to the east and the San Bruno Ship Channel to the south. The native plant communities occurring in the upland portions of the Site consisted of coastal prairie and foothill grassland (NDDB, 1994).

2 Design of the Biological Evaluation

The biological evaluation was designed to (1) define the existing biological setting, identify potential receptor species and provide a preliminary evaluation of the habitats on or immediately adjacent to the Site and (2) provide an overview of the relationships between potential contaminants of concern, migration pathways and receptor species.

2.1 Field Study and Habitat Evaluation

The three areas of potential ecological importance on and/or immediately adjacent to the Site were identified based upon an initial site visit in August 1993, discussions with Fuller-O'Brien staff and a review of historical aerial photographs of the Site. The following habitats as well as the Site in general were evaluated in a field study conducted in November 1993: (1) the marginal wetland located immediately to the south of the Site; (2) the mudflat on the Bay immediately to the east; and, (3) the grassy upland area in the northwest portion of the Site.

2.1.1 Fishes and Invertebrates

Habitat available for fishes and aquatic invertebrates was assessed during a reconnaissance trip to the Site on November 10, 1993. No direct sampling of aquatic organisms was called for in this phase of the project. Although there has been no known sampling of the mudflats and wetland in the immediate vicinity of the Site, a substantial amount of data exists from biotic sampling of the wetland on the west side of the Bay. Reasonable predictions of aquatic species present in the vicinity of the Site can be made based upon available data from adjacent wetland and other studies in the San Francisco Bay region (e.g. Josselyn 1983; Josselyn and Buchholz 1984; Jenkins, Sanders & Associates, unpublished data; Nichols and Pamatmat, 1988).

2.1.2 Birds

Surveys were conducted on November 9 and 10, 1993. This time of year is neither the breeding season nor peak migration. Any birds observed were assumed to be overwintering birds which forage and roost in the area.

The wetland area had tidal influence. It is known that tides, as well as weather, strongly influence attendance of shorebirds and waterbirds on their foraging grounds. The mudflats, in contrast, appeared to be well-configured for shorebird use and two low tide surveys were deemed necessary. Exposed mudflats, present at low tides, are the preferred habitat for foraging shorebirds and some seabirds, particularly gulls. Therefore, low tide surveys were conducted on both November 9 and 10. High tide surveys also were done because temporary impoundments from high tides attract waterbirds such as ducks and egrets.

The high tide surveys at the Site, carried out to observe waterfowl which might utilize temporary salt marshes, were conducted on November 9. The site is not well-configured for water impoundment in tidal pools during a high tide and most of the area away from the mudflats is upland or degraded freshwater marsh with little tidal influence.

Site surveys were conducted for 1 1/2 to 2 hours before and after each high and low tide. Surveys were made using Leitz 10 x 40 binoculars and a 20 - 40 x zoom Bushnell spotting scope. Equal time was spent surveying all three habitat types.

2.1.3 Terrestrial Vertebrates

All three habitats on the Site were surveyed for amphibians, reptiles and mammals on November 10, 1994. The survey was conducted by walking extensively through the disturbed upland and along the marginal wetland and mudflat habitats. All animals observed or indicated by

sign (e.g. tracks, burrows, scats, etc.) were noted. Rocks, boards and other debris were turned to look for reptiles and small mammals. No active trapping or collecting was conducted.

2.2 Special Status Plant and Animal Species

Threatened and endangered species and other special status plants and animals potentially occurring in the vicinity of the Site were determined prior to the field study by thoroughly reviewing the relevant federal, state and independent listings of special status species and species of special concern. The Natural Diversity Data Base (NDDB) was searched for information regarding the Site and the surrounding areas, including Pt. San Bruno. The NDDB is a computerized inventory of information on the location and condition of rare, threatened, endangered and sensitive plants, animals and natural communities in California. During the field study special attention was given to assessing potential habitat for special status species.

2.3 Additional Sampling

In addition to the biological studies, a number of new stations were incorporated in the Phase II RFI sampling to provide additional information on contaminants of concern in biologically sensitive area. These stations were sampled and analyzed for metals, VOCs and SOCs and were located in the mudflat adjacent to the eastern end of the Site (MF-1 series) and at the mouth of the narrow channel (MF-2 series). The E series transect was resampled in attempt to further characterize possible lead contamination. The methods and results are presented in the RFI (Harza, 1994); the results of this sampling are summarized below in Sections 4.2.1.3 and 4.2.2 and in Tables 7 and 8.

3 Results

3.1 Marginal Wetland Habitat

The marginal wetland has developed since the San Bruno Ship Channel was filled with dredge spoils between the mid 1960s and mid 1970s. A narrow channel (<50 m wide) remained between the dredge spoil to the south and the Site. This channel receives freshwater discharge from a storm drain opening into the head of the channel adjacent to the southwest corner of the Site. Over the approximately 20 years since the creation of the narrow channel, wetland has become established.

3.1.1 Vegetation

Over the approximately 400 meters of channel, wetland habitat has developed. The channel contains a substantial salinity gradient from freshwater discharge from the storm drain to full tidal exchange at and near the mouth of the channel.

The wetland vegetation was mapped during the Site survey, although precise linear extent and area were not measured (Figure 3). As the map indicates, the narrow channel contained a series of virtually pure stands of wetland vegetation in a linear gradient from freshwater to tidal marine water. At the upper end of the gradient, in the vicinity of the storm drain outlet, was a pure stand of cattail (*Typha* sp.) which abruptly transitioned to giant bullrush (*Scirpus robustus*). The next vegetation type was an extensive stand of saltgrass (*Distichlis spicata*) in the reach where the storm water influence was diminished and tidal inundation was restricted to the higher tides. The next reach to the east was a mixed stand of saltgrass and common pickleweed (*Salicornia virginica*). In the reach nearest the Bay there were areas of open water and extensive areas of common pickleweed. A small amount of California cord grass (*Spartina foliosa*) was

present in the extreme south east area of the wetland behind the sand barrier separating the wetland from the San Francisco Bay.

3.1.2 Benthic Invertebrates

The small channel in the marginal wetland should have a relatively natural benthic invertebrate community. Although the wetland has developed in the past 20 years since the filling of the San Bruno Ship Channel, most benthic invertebrates have pelagic larval stages that disperse widely and rapidly colonize new, suitable habitat. Slough habitats characteristically have higher diversity of invertebrates than adjacent marsh plains and mudflats due to longer and more frequent submergence of the channel bottom. Channels with increased tidal flow bring in plankton and other suspended and dissolved nutrients which can support high densities of filter feeders, such as ribbed mussel, *Ischadium dimissum*, and some amphipods, e.g. *Corophium* sp., in addition to the burrowing deposit feeders characteristic of both mudflats and channels. Table 1 lists representative species likely to occur adjacent to the Site because they are among the most common benthic invertebrates known from channels and/or mudflats of natural and restored wetlands in the San Francisco Bay region (Josselyn and Buchholz 1984; Jenkins, Sanders & Associates, unpublished data; Nichols and Pamatmat 1988).

3.1.3 Fishes

The small shallow channel in the marginal wetland should also be used seasonally by the smaller species and individuals of larger species of fishes known to enter similar habitat in wetlands of South San Francisco Bay. Most of these same species also would forage over the mudflats to the east of the Site at high tide. Woods (1981) collected nine common species of fish in the tidal sloughs of the Hayward salt marsh restoration. These species and a few others considered common in salt marshes (Miller and Lea, 1972; Jenkins, Sanders & Associates, 1994) are listed in Table 2. The small size of the channel and the presumed considerable input of

freshwater from the storm drain emptying into the upper end would limit the sizes and populations of the 13 species listed. Smaller species preferring lower salinity, brackish water, such as mosquitofish, rainwater killifish and juvenile staghorn sculpin, are predicted to be the dominant fishes in this habitat. Juvenile topsmelt (*Atherinops affinis*) characteristically use slough channels as nursery habitat in the spring and summer, moving into deeper water in the fall (Jenkins, Sanders & Associates, 1994). Consequently, topsmelt may be seasonally abundant in the narrow channel. Other numerically dominant species would be the three resident benthic goby species: arrow goby, longjaw mudsucker and yellowfin goby.

3.1.4 Birds

Both observed and predicted avifauna are listed in Table 3 along with the behavior engaged in at the time of observation and the habitat types they utilized during the surveys. Twelve species were seen during the two-day survey in the Marginal Wetland habitat south of the Site.

Few birds were observed in the Marginal Wetland habitat at high tide. The tidally influenced part of this wetland was very small with respect to other types of similar habitat throughout San Francisco Bay, which may contribute to the low number seen. However, three species not seen on any other survey did appear at high tide in the marsh: snowy egret, mallard, and belted kingfisher. Overall, relative to the rest of San Francisco Bay, this area is unimportant for waterbirds.

The riparian/freshwater habitat, inland from the brackish marsh, was used extensively by passerines such as white and golden-crowned sparrows, house finches and yellow-rumped warblers. They fed on the seeds of various grasses including *Distichlis* and *Scirpus*.

The south wetlands and riparian habitat surrounding them are a habitat island within a heavily industrial area. They are bounded on the west and north by parking lots or buildings, on

the east by San Francisco Bay, and on the south by approximately 50 acres of fill dirt. Because of habitat isolation and fragmentation in the vicinity of the Site, many species which otherwise might be able to utilize these areas or which might pass through from more suitable habitat, are most likely absent from the Site. Wildlife corridors, contiguous sections of natural habitat which may be small and linear, are necessary for many species of wildlife to reach and inhabit larger portions of natural habitat in largely urbanized or industrial areas. Because of lack of accessibility or lack of wildlife corridors into the habitat, many avifauna which might otherwise be able to use the habitat in the immediate vicinity of the Site do not.

The marginal wetland adjacent to the Site has two additional features which make it fairly unsuitable for nesting by birds: small size and linear shape. The small size of the wetland is reflected in the low numbers of birds that utilize it. Nesting birds, whether colonial or solitary, need a buffer zone around their breeding sites, and thus the amount of habitat needed per pair is larger than their actual territory. Many passerine birds both nest and forage on their territories and often defend both the nesting site and their feeding areas; they require a larger distance between themselves and their nearest neighbors than birds that do not both nest and forage on their territories. Additionally, birds often avoid linear habitat types which provide for little or no protection buffer from [illegible]tors.

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[illegible] should have a low diversity of mammals given its small size and linear configuration, isolation in an urbanized and industrialized area and lack of wildlife corridors. Opossum (*Didelphis virginianus*) and raccoon (*Procyon lotor*), which are well adapted to urbanized ares, appear to be resident on the upland portion of the Site. The patches of natural appropriate habitat in Point San Bruno appear to be sufficiently large to support populations of these omnivorous mammals. California ground squirrels (*Spermophilus beecheyi*) and large numbers of their burrows were observed in the fill to the south of the wetland. However ground squirrels rarely, if ever, enter wetlands to forage. The lack of clear wildlife corridors connecting

the Site to larger patches of habitat may limit the utilization of this Site by other species of small mammals.

3.1.6 Special Status Species

Special status species which might be able to utilize the marginal wetland adjacent to the Site would probably not be present because of lack of access combined with the small size and recent creation of the habitat (since filling of the shipping channel, completed in the mid 1970s). As discussed above, the connection of wildlife corridors to the marginal wetland is uncertain.

It is unlikely that the California clapper rail (*Rallus longirostris obsoletus*) and salt marsh harvest mouse (*Reithrodontomys raviventris*) inhabit the area. Rails are reluctant to fly and usually need contiguous habitat in order to emigrate to a new area (J. Takekawa, pers. comm.). Among the many critical factors in adequate habitat for rails is the shape of the channels the rails forage. The rails prefer sharply incised channels which provide a good surface from which to pick clams, amphipods and mussels. The narrow channel south of the Site has relatively gradually sloped sides. A larger network of channels than is present at the Site also would be needed in order to support a small population of rails. The fragmentation of marsh habitat around the Site may also have an effect on rail reproductive success. Young chicks may not be able to emigrate unless there are large contiguous tracts connecting the new marshes to the few surviving salt marsh areas where they are present (Gill, 1973; Evens and Page, 1983).

The salt marsh harvest mouse does not appear on NDDB printout for the area. It is very unlikely that this small mammal, which is restricted to pickleweed-dominated habitat, would have colonized this recently created salt marsh habitat due to lack of wildlife corridors connecting it to larger natural salt marshes located some distance from the Site (Shellhammer et. al., 1982; Shellhammer et. al., 1988). The salt marsh wandering shrew and salt marsh common yellow throat, which did appear on the NDDB printout (Table 4), would also be unlikely inhabitants of

the small, recently developed, isolated wetland habitat because of lack of wildlife corridors and limited appropriate habitat as discussed above.

3.2 Mudflat Habitat

The Site is immediately adjacent to the San Francisco Bay; the entire eastern boundary of the Site is protected by a revetment of concrete pieces and rocks. The mudflat habitat drops off steeply from the revetment due to a long history of dredging and filling in the vicinity of the Site.

3.2.1 Benthic Invertebrates

Mudflats with reduced tidal flow and relatively long exposure, such as those east of the Site, typically support large populations of burrowing organisms and deposit feeders, such as Baltic clam (*Macoma balthica*), burrowing amphipods (e.g. *Grandideriella japonica*) and common polychaetes (*Capitella capitata, Eteone lighti* and *Neanthes succinea*). Table 1 lists representative species likely to occur adjacent to the Site because they are among the most common benthic invertebrates known from mudflats and/or channels of natural and restored wetlands in the San Francisco Bay region (Josselyn and Buchholz, 1984; Jenkins, Sanders & Associates, unpublished data; Nichols and Pamatmat, 1988).

3.2.2 Fishes

Twelve of the 13 species of fishes listed in Table 2 are considered likely to be resident on or forage over the mudflats to the east of the Site at high tide (Miller and Lea, 1972; Jenkins, Sanders & Associates, 1994; Woods, 1981). The mosquito fish is not tolerant of seawater and therefore is not present over mudflats. There are three resident benthic goby species that commonly occur on mudflats in San Francisco Bay: arrow goby, longjaw mudsucker, and

yellowfin goby. Northern anchovy (*Engraulis mordax*), topsmelt, shiner surfperch (*Cymatogaster aggregata*) and starry flounder (*Platichthys stellatus*) are expected to congregate in feeding aggregations at high tide over the mudflat. Other species of flatfishes, as well as large mid-water predators, such as striped bass (*Morone saxatilis*), also are reputed to move onto the mudflats to feed at high tides.

3.2.3 Birds

Both observed and predicted avifauna are listed in Table 3 along with the behavior engaged in at the time of observation and the habitat types they utilized during the surveys. Ten species were seen during the two-day survey on the mudflats east of the Site.

The mudflats drop off steeply from the rock revetment along the eastern boundary of the Site and are not as extensive as others in San Francisco Bay. Compared to other areas in the Bay, few shorebirds utilized the mudflats. The usual common shorebirds such as western sandpiper (*Calidris mauri*), willet (*Catoptrophorus semitalmatus*) and whimbrel (*Numenius phaeopus*) were seen, as were several species of gulls, including western gull (*Larus occidentalis*) and herring gull (*Larus argentatus*). Two snowy plovers (*Charadrius alexandrinus nivosus*), federally listed as a threatened species, were also sighted. The mudflats are an adequate foraging and resting area for these shorebirds, but do not provide any nesting habitat.

3.2.4 Mammals

Two of the larger mammals which appear to be resident on the upland portion of the Site, opossum and raccoon, are known to forage in the intertidal and would be expected to do so on this site.

3.2.5 Special Status Species

The western snowy plover (*Charadrius alexandrinus nivosus*), a federally listed threatened species, was observed foraging on the upper mudflat on the second day of field observations. This species would only forage in the vicinity of the Site because its breeding habitat of salt pond dikes are not present (Zeiner, et al, 1990).

3.3 Upland Habitat

Degraded upland habitat was present across East Grand Ave., north of the building complex. This habitat consisted of a flat area with two small fresh water wetland with cattails and other typical marsh plants. It was bounded to the north, west and east by steep slopes. The upland flat appears to have been cut out of the slopes some time in the past.

3.3.1 Vegetation

The upland habitat was highly degraded due to a long and continuous history of physical disturbance by industrial activities. The dominant vegetation consisted of introduced annual and perennial grasses, such as red fescue (*Bromus rubens*) and weedy perennials and annuals such as fennel (*Foenicalum vulgare*) and mustard (*Brassica* sp.). Much of the flat area appeared to be cleared of vegetation on a regular basis for fire control and/or storage of materials from the industrial operation. The vegetation was not mapped nor was a species list developed in this preliminary site evaluation.

3.3.2 Freshwater Wetlands

Two small freshwater wetlands had been created on the upland portion of the Site due to discharge of water from drainage pipes (Figure 3). One very small wetland (approximately 100 ft^2) has resulted from the discharge from a four inch diameter pipe draining from the former tank farm area above the east slope of the upland. At the time of the field survey this wetland was surrounded by small cattails (*Typha* sp.) and had a small area of open water (approximately one meter diameter by 15 cm deep). The other wetland was near the center of the upland flat and north/northwest of the water tank. This wetland was supported by a larger discharge of water from an eight inch diameter pipe apparently draining the Genetech parking lot above the north slope of the upland. The wetland was 1500 to 2000 ft^2 in area, densely overgrown with cattails and had little open water. Scattered willows (*Salix* sp.) up to four meters in height grew throughout the wetland. The inlet channel and outlet ditch, which drained the water to the paved street where it entered a storm drain, were choked with cattails and had occasionally dense clumps of pampas grass (*Cortaderia atacamensis*) along the margins. Clumps of pampas grass also occurred around the margin of the wetland. Beyond the pampas grass the vegetation immediately changed to upland species without a transition zone of more mesic vegetation.

3.3.3 Reptiles and Amphibians

No reptiles or amphibians were observed in the disturbed upland habitat during a reconnaissance trip to the Site on November 10, 1993. The Site is likely to support populations of western fence lizard, *Sceloporus occidentalis* and northern alligator lizard, *Gerrhonotus coeruleus*, which are common in similar habitats throughout California. The two areas of freshwater wetland, both supported by drainage from unknown sources to the north and east and flowing from pipes onto the Site, are predicted to provide breeding habitat for California tree frog, *Hyla regilla* and western toad, *Bufo boreus*. Another amphibian likely to be present on the Site because of the small, created wetland areas is the California slender salamander, *Batrachoseps attenuatus*. All species of reptiles and amphibians discussed as probably occurring

on the Site are common species characteristic of disturbed as well as natural coastal habitats in California (Zeiner, et. al., 1990).

3.3.4 Birds

Both observed and predicted avifauna are listed in Table 3 along with the behavior engaged in at the time of observation and the habitat types they utilized during the surveys. The disturbed north upland habitat had little bird use. Eight species were seen during the two-day survey on the disturbed upland habitat north of the buildings; two species were observed flying over the area. Meadowlarks and mourning doves, seen in the southern areas foraging along the debris and vacant lot just inland from the mudflats, were also seen in the disturbed degraded grassy areas to the north. A golden eagle (*Aquila chrysaetos*), listed as a vagrant in the area, was also seen perching on a telephone pole above the northern upland. However, this area did not attract any new species and seems to be fairly unproductive for birds. The small freshwater seep at the foot of the hill might attract other species during the breeding season but during the surveys in November it did not attract any birds.

The freshwater *Typha*-dominated marsh and the freshwater seep at the northern disturbed habitat had no observed use by avifauna. The *Typha* marsh was very thick with underlying vegetation; the seep had only low vegetation and moss. The latter did not appear good for roosting by avifauna because of the lack of tall vegetation. It could possibly be used for drinking in the summer months when water might become a limiting factor for birds in this urban area. During the breeding season, it is feasible that yellow-headed and red-winged blackbirds (*Xanthocephalus xanthocephalus* and *Agelaius phoeniceus*, respectively) might use the *Typha* marsh for nesting.

3.3.5 Mammals

The only small mammal observed during the field survey was the California ground squirrel. Their burrows were abundant throughout the disturbed upland habitat as were pocket gopher (*Thomomys bottae*) burrows and mounds. The presence of droppings, many empty snail shell and trails through the dense cattails indicate that opossum forage in the larger wetland. Raccoon and striped skunk (*Mephitis mephitis*) have probably maintained small populations in the unindustrialized pockets of upland around Point San Bruno. Two rodents that commonly occur in disturbed areas near buildings are probable residents of the upland habitat on the Site: the house mouse (*Mus musculus*) and the Norway rat (*Rattus norvegicus*). The presence of the small wetlands in the upland habitat make it likely that several small predatory mammals that feed on terrestrial and aquatic invertebrates (e.g., opossum and raccoon) forage and are possibly resident on the Site. The lack of wildlife corridors throughout the surrounding industrialized areas probably severely limits the recruitment of other species to the remnant upland habitat on the Site.

3.3.6 Special Status Species

One golden eagle, a federally and state listed Endangered Species, was observed both days of the Site survey either foraging over Oyster Point or resting on power poles adjacent to the Site. Golden eagles are considered to be vagrants in the San Francisco Bay area.

The San Francisco owl's-clover (*Triphysaria floribunda*), a federal Category 2 species and California Native Plant Society (CNPS) Category 1b species, is reported as a non-specific occurrence at Point San Bruno, South San Francisco, based upon one specimen in the Jepson Herbarium, UC Berkeley, collected in 1965 (NDDB, Table 4). The species was not observed during the Site survey. Although early winter is not a good time to observe this small species, it is highly unlikely that the species occurs on the highly disturbed upland portion of the Site.

3.4 Summary

Based on an initial site visit, three habitats were considered of potential ecological importance. These were evaluated in a field study conducted in November 1993: (1) the marginal wetland located immediately to the south of the Site; (2) the mudflat on the Bay immediately to the east; and (3) the grassy upland area in the northwest portion of the Site.

The evaluation indicates that both the Marginal Wetland and the Mudflat habitats can be considered to be of some biological importance. In the Marginal Wetland the benthic invertebrate community is expected to be relatively natural; smaller species of fishes can be expected to use the shallow channel and forage over the mudflats during high tide and the area was used extensively by passerine birds. However, the area is small, narrow and isolated and so use by waterbirds, mammals and special status species is expected to be limited at best. In the Mudflat habitat, the benthic invertebrate community is expected to be that of a natural or restored area. The fish species expected would include most or all of those commonly found over mudflats. Ten species of birds were observed over the mudflat, including the snowy plover, a federally listed threatened species. However, relatively few shorebirds used the mudflats compared to other mudflat habitats in the Bay (Jenkins, Sanders & Associates, 1992).

The Upland area is a highly disturbed area with a history of industrial activity, limited size and no nearby areas for recruitment. It can be considered to have little biological importance. Little bird use was observed in the habitat; no bird use of the small freshwater wetlands was seen. No reptiles or amphibians were observed and the only mammal observed was the California ground squirrel. Opossum were indicated by the presence of droppings, snail shells and trails in the cattail. The only species of special status observed in the Upland habitat was an individual golden eagle, which was either foraging over Oyster Point or resting on power poles north of the Site.

4 Habitats and Contaminant Sources

4.1 Potential Contaminant Sources

Five Areas of Concern were identified by Ratech Resources in their May 28, 1993, *Data Needs Letter for a Risk Assessment/Ecological Evaluation*. These Areas of Concern are: (1) the Warehouse Area, (2) the MW-21 Area, (3) the Former Tank Farm Area/Eastern Property, (4) the Former Solvent Still Area and (5) the Former Breakwater Area (Figure 4). The contamination in the Former Breakwater Area was deemed to have been mitigated and so will not be further discussed in this report. In addition to the Areas of Concern, several historic outfalls have been documented on and around the Site (Mark Group, 1989).

4.1.1 Warehouse Area

The current warehouse, built in 1972, is used to store finished products including a variety of paints (Figure 4). It is located on an area previously used for white lead works (1898 to 1907) and red lead works (1907 to 1913). The area also contained pigment storage buildings which, along with the lead works, were removed in 1969. The EPA indicated that the area is being considered as an Area of Concern due to lead detected in the soils.

4.1.2 MW-21 Area

In the past, this area was used to store drums of raw material and appears to have been paved at the time. It is currently used as a parking lot (Figure 4). The MW-21 well was installed to monitor upgradient/background conditions in the fill at the Site. However, VOCs, SOCs and metals of unknown source have been found in ground water samples of this area. The area is considered a Solid Waste Management Unit (SWMU) and so is included as an Area of Concern.

4.1.3 Former Tank Farm Area/Eastern Property

Up to 25 above-ground tanks were installed by Fuller between 1913 and 1938 north of East Grand Avenue; two additional tanks used to store diesel fuel were leased and operated by Merck Chemical (Figure 4). Most of the Fuller tanks were used to store solvents and linseed oil. In 1982, a leak of toluene was discovered from an underground pipe between the unloading area and the pump house. The impacted soil was aerated and the piping was replaced before operation resumed. The tank farm was removed by O'Brien in 1988. The Former Tank Farm Area, which is designated as a SWMU, and the Eastern Property, located directly south and east of the Former Tank Farm Area, are included as an Area of Concern to evaluate effects and possible migration of the toluene leak.

4.1.4 Former Solvent Still Area

This area is the location of two former solvent stills (Figure 4). The first still was operated by Fuller between 1948 and the late 1950s and was not in operation when O'Brien started operating the facility. O'Brien built a new still in 1975, which operated until 1979. This area has been designated a SWMU and the EPA is concerned compounds may have been released during the operation of the Former Solvent Still(s).

4.1.5 Outfalls

In the *San Bruno Channel Fill Investigation* (Mark Group, 1989) several outfalls were identified on and around the Site. These outfalls apparently discharged into the San Bruno Channel. Of major concern is the City of South San Francisco sewer drain which discharges at the head of the narrow channel south of the Site (Figure 4). This discharge could be a source of contaminants typically found in urban runoff.

4.2 Relationships Between Habitat and Potential Contaminant Sources

4.2.1 Marginal Wetland Habitat

The Marginal Wetland is located just south of the O'Brien fenceline and runs approximately 400 meters from its head to the mouth of the Bay. The area varies along its length in biology and potential sources of contamination. For this reason we will discuss the Marginal Wetland in three sections: the Upper portion of the Wetland, adjacent to the MW-21 Area, the Mid portion, south of the Warehouse Area, and the Lower portion of the Wetland, just south of the Former Solvent Still Area (Figure 5).

4.2.1.1 Upper Wetland

At the head of the narrow channel within the Marginal Wetland is a large City of South San Francisco storm pipe which discharges surface rain runoff and dry weather urban runoff (Mark Group, 1989). The vegetation of the Upper Wetland is mainly cattail with some giant bullrush down-channel. Just north of the western end of the Upper Wetland is the MW-21 Area, which has been designated as a SWMU and an Area of Concern (Figure 5). This SWMU and the storm drain represent the primary sources of contaminants for the Upper Wetland.

- **Data on Potential Sources**

Table 5 gives the ranges of contaminants found in the soil and ground water in the MW-21 Area. Maximum concentrations of copper, nickel and chromium in the soil were 240, 310 and 200 mg/kg, respectively; the maximum concentration of lead was 1000 mg/kg. In the ground water, the maximum total nickel concentration was 17 mg/l (total metal concentration). Dissolved metal concentrations were generally 1 to 3 magnitudes lower than total metal concentrations. Maximum dissolved nickel concentration for the

ground water was 0.0122 mg/l. Maximum soil concentrations at the MW-21 Area were generally found in the superficial layer (<1'), except for arsenic (5.5') and lead (10.5').

In MW-21 Area soils, five semi-volatile organic compounds (SOCs), benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene, fluoranthene, and naphthalene, had maximum concentrations of 9,100, 29,000, 10,000, 20,000 and 8,200 μg/kg, respectively (Table 5). Maximum soil concentrations at the MW-21 Area were generally found in a sample taken at an unknown depth (OPF-21). In the ground water, concentrations for these SOCs were <10, 21, <10, <10 and 64 μg/l, respectively. Maximum concentrations for isophorone and phenol in the ground water were 430 and 150 μg/l, respectively.

- **Potential Transport Pathways**

Maximum metals concentrations from the MW-21 soils were generally found in the superficial layer and therefore the primary transport mechanism to the Upper Wetland would be surface water runoff and soil erosion. Maximum arsenic and lead concentrations were found at depths >5.5' and any movement of these contaminants would occur with the ground water. Three SOCs, naphthalene, isophorone and phenol, were found in the ground water and may migrate to the Upper Wetland. Contaminants may also be transported to the habitat by storm water runoff, discharging from the City of South San Francisco storm pipe.

- **Habitat and Potential Receptors**

A relatively natural benthic invertebrate community is expected in the narrow channel. The upper portion of the channel would have a relatively high freshwater input from the storm drain, so various dipteran larvae could be expected to be present and could

be exposed to contaminants found in the sediments. Smaller species of fishes preferring lower salinity, brackish water, such as mosquitofish, rainwater killifish and juvenile staghorn sculpin, are predicted to be present and could be exposed to contamination in the surface water and sediment. Many passerine birds were observed feeding on the seeds of the grasses in the area. These birds could be exposed to contaminants in the soils of the marsh. Opossum and raccoon are expected to enter the marsh to forage in and along the narrow channel and could be exposed to contaminants present in the sediment or surface water. No special status species are expected to be in the Upper Wetland habitat.

- **Data Gaps**

Although the soils and ground water from the MW-21 Area have been well defined, the storm water discharge has only been analyzed previously for lead and zinc (Mark Group, 1989). No analysis of the sediments and surface water in the upper portion of the channel, adjacent to the MW-21 Area, has been performed.

4.2.1.2 Mid Wetland

The middle of the wetland is characterized by giant bullrush up-channel and saltgrass directly south of the warehouse. This section of the Wetland is south and down-gradient from the Warehouse Area of Concern (Figure 5) as well as down-gradient from the fill to the south and down-stream from the storm sewer discharge.

- **Data on Potential Sources**

Table 6 gives the ranges of contaminants found in the soil and ground water in the Warehouse Area and the metals found in the sediment of station E-2, located in the middle

of the narrow channel (Figure 5). In Warehouse Area soils, maximum concentrations of copper, nickel and zinc were 120, 190 and 360 mg/kg, respectively; the maximum concentration of lead was 37,000 mg/kg. One station, SWB-5, was located directly adjacent to the narrow channel and south of the Warehouse Area. At station SWB-5 maximum concentrations of copper, nickel, zinc and lead were 110, 75, 170, and 320 mg/kg, respectively. In the ground water, the maximum total lead concentration was 200 mg/l; SWB-5 had a total lead concentration of 0.7 mg/l. Dissolved metal concentrations were generally 1 to 2 magnitudes lower than total metal concentrations. Maximum dissolved lead concentration for the ground water was 0.75 mg/l at station SWB-7. Dissolved lead concentration at station PM-14 was below detection limits (<0.04 mg/l). Maximum soil concentrations at the Warehouse Area were generally found at > 5', except for lead, nickel and chromium which were found at <1.5'. Marsh sediment concentrations were determined from samples taken at 3'.

In Warehouse Area soils, ten SOCs had maximum concentrations ranging between 2,700 and 6,100 μg/kg (Table 6); station SWB-5 concentrations were all below detection limits. Three additional SOCs, fluoranthene, phenanthrene and pyrene, had maximum concentration of 14,000, 8,100 and 14,000 μg/kg, respectively. Ground water concentrations for SOCs and VOCs were all at or below method detection limits (MDLs) (Table 6). Maximum soil concentrations of metals and SOCs at the Warehouse Area were generally found at 5-5.5'.

- **Potential Transport Pathways**

The Mark Group's sampling of the narrow channel found lead to be vertically distributed at station E-2 and two stations to the south (E transect). Because the lead concentrations were higher in the fill above the channel than in the channel, they speculated that the source of lead could be from the fill dirt (Figure 5; Mark Group, 1989). Recent sampling by Harza found a similar pattern: the concentration of lead was

higher in the fill above the channel than in the channel itself (Harza, 1994). Channel sediments at station E-2 had maximum concentrations of copper, zinc, nickel and lead of 83, 180, 150 and 810 mg/kg, respectively (Table 6).

Except for lead, nickel and chromium, maximum metal concentrations at the Warehouse Area were found at depths >5'. Any movement of these contaminants would occur with the ground water. Movement of lead, nickel and chromium, whose maximum concentrations were found at depths of <1.5', could occur with surface water runoff or soil erosion. Contaminants may also migrate from upper regions through movement of the channel water and sediments.

- **Habitat and Potential Receptors**

A relatively natural benthic invertebrate community is expected in the narrow channel. The invertebrates listed in Table 1 are indicative of the deposit and suspension feeders that could be exposed to contaminants found in the sediments. Smaller species of fishes preferring lower salinity, brackish water, such as mosquitofish, rainwater killifish and juvenile staghorn sculpin are predicted to be present and could be exposed to contamination in the surface water and sediment. Many passerine birds were observed feeding on the seeds of the grasses in the area. These birds could be exposed to contaminants via the soils in the marsh and the food chain. Opossum and raccoon, which are expected to enter the marsh to forage in and along the channel, could be exposed to contaminants present in the sediment, surface water and food chain. No special status species are expected to be in the Mid Wetland habitat.

- **Data Gaps**

Significant levels of lead and zinc contamination in the middle portion of the Wetland habitat have been documented previously (Mark Group, 1989). No analyses of sediments in the channel for other metals and SOCs have been performed. No sampling of plant and animal tissues in the mid portion of the Wetland habitat to define the bioavailability of contaminants has been performed. Although lists of expected species have been compiled, no surveys of fish and benthic invertebrates at the Mid Wetland have been performed.

4.2.1.3 Lower Wetland

In the lower wetland, the narrow channel opens up into a small ponded area behind a sand barrier which separates the Wetland from the San Francisco Bay. This section of the channel is subject to tidal flux from the Bay. The vegetation is a mix of saltgrass and pickleweed up-channel, turning to mainly pickleweed towards to mouth of the channel (Figure 5). A small amount of California cordgrass was present in the extreme southeast area of the wetland. This section of the Wetland is just south of the Former Solvent Still Area, which has been designated as a SWMU and an Area of Concern. The fill dirt up-gradient and south of the Wetland is a possible source of contaminants. Contaminants, including those from storm sewer discharge, may possibly migrate from up-channel.

- **Data on Potential Sources**

Table 7 gives the ranges of contaminants found in the soil and ground water in the Former Solvent Still Area (Figure 5). In Former Solvent Still Area soils, maximum concentrations of arsenic, chromium, copper, nickel and zinc were 52, 200, 69, 250, and 381 mg/kg, respectively. The maximum lead concentration was 1,200 mg/kg (Table 7). In the ground water, the maximum total chromium and copper concentrations were 38 and

5.8 mg/l, respectively. Maximum total nickel and lead concentrations were 61 and 643 mg/l, respectively (Table 7). Dissolved metal concentrations were generally 2 to 4 magnitudes lower than total metal concentrations. Maximum dissolved copper and lead concentrations for the ground water were 0.023 and 0.018 mg/l for copper and lead, respectively. Dissolved chromium and nickel concentrations were below detection limits (<0.005 and <0.01 mg/l, respectively). Maximum soil concentrations at the Former Solvent Still Area of arsenic, cadmium, lead and zinc were found in the superficial layer; concentrations of silver, chromium, copper and nickel were found at the 5-6' level. Mudflat sediment concentrations were determined from samples taken at 0.5'.

In Former Solvent Still Area soils, eight SOCs had maximum concentrations ranging from 500 and 5,000 μg/kg (Table 7). In the ground water, three VOCs, benzene, ethylbenzene, and total xylenes, had maximum concentrations of 190, 300, and 4,100 μg/l, respectively. Seven SOCs were detected with maximum concentrations ranging between 50 and 500 μg/l (Table 7). Five maximum soil concentrations at the Former Solvent Still Area were found at 5-5.5', two at 3-3.5' and four in the superficial layer (<1').

- **Potential Transport Pathways**

Mudflat sediments at the MF-2 stations had maximum concentrations of copper, nickel, lead and zinc of 160, 45, 40 and 160 mg/kg, respectively. Three SOCs were also detected at these stations, fluoranthene, phenanthrene and pyrene, with maximum concentrations of 770, 530 and 720 μg/kg, respectively (Table 7).

Maximum concentrations at the Former Solvent Still of copper, phenanthrene and pyrene were found at 5-6' and it would be expected that movement of these contaminants would most likely occur with the ground water. Lead, selenium and fluoranthene had maximum concentrations in the superficial soil and could be expected to be transported via

soil erosion or surface water runoff. Contaminants may also migrate from up-channel through movement of the channel water and sediments.

- **Habitat and Potential Receptors**

The narrow channel appears to consist of a relatively natural benthic invertebrate community. The lower portion of the channel would have a relatively high saltwater input from the Bay, so sediment and deposit feeders including those listed in Table 1 could be expected to be present and could be exposed to contaminants found in the sediments. Smaller species of fishes preferring lower salinity, brackish water, such as mosquitofish, rainwater killifish and juvenile staghorn sculpin, as well as juvenile topsmelt and benthic goby are predicted to be present and could be exposed to contamination in the surface water and sediment. This tidally influenced portion of the channel, although small, did attract a few waterbirds: snowy egret, mallard and belted kingfisher. These waterbirds could be exposed to any contaminants in the sediments and surface water. Many passerine birds were observed feeding on the seeds of the grasses in the area. These birds could be exposed to contaminants in the soils in the marsh. Opossum and raccoon are expected to enter the marsh to forage in and along the channel and could be exposed to contaminants present in the sediment or surface water. No special status species are expected to be in the Lower Wetland habitat.

- **Data Gaps**

Three SOCs (fluoranthene, phenanthrene and pyrene) were found at low levels in the sediments at the MF- 2 stations. No analyses of the sediments in the lower portion of the channel, south of the Former Solvent Still Area, have been performed. Although lists of expected species have been compiled, no surveys of fish and benthic invertebrates at the Lower Wetland have been performed.

4.2.2 Mudflat Habitat

Directly east of the Site is the San Francisco Bay; the boundary of the Site is protected by a revetment of concrete pieces and rocks. The Mudflat habitat drops off steeply from this revetment. The Eastern Property, which is part of the Former Tank Farm/Eastern Property Area of Concern, is just to the west of the Mudflat habitat (Figure 5).

- **Data on Potential Sources**

Table 8 gives the ranges of contaminants found in the soil and ground water in the Eastern Property and the sediments of the adjacent Mudflat habitat (Figure 5). In Eastern Property soils, maximum concentrations of silver, arsenic and cadmium were 37, 27, and 14 mg/kg, respectively. Maximum concentrations of chromium, copper and nickel were 290, 230 and 110 mg/kg, respectively. Maximum concentrations of lead and zinc were 28,000 and 11,000 mg/kg, respectively. In the ground water, the maximum total copper, nickel and zinc concentrations were 12, 15 and 62 mg/l, respectively; the maximum total lead concentration was 100 mg/l. Dissolved metal concentrations were generally 2 to 3 magnitudes lower than total metal concentrations. Maximum dissolved zinc concentration for the ground water was 0.1 mg/l. Dissolved chromium copper, nickel and lead concentrations were below detection limits (<0.01, <0.01, <0.01, <0.01 and <0.04 mg/l, respectively). Maximum soil concentrations at the Eastern Property Area were all found between 3 to 4.5'. Mudflat sediment concentrations were determined from samples taken at 0.5'.

In Eastern Property soils, two VOCs were detected, ethylbenzene and xylene, with maximum concentrations of 600 and 14,000 μg/kg, respectively. Twelve SOCs were detected with maximum concentrations ranging between 8,400 and 83,000 μg/kg (Table 8). In the ground water, two VOCs, ethylbenzene and total xylenes were detected with maximum concentrations of 130 and 170 μg/l, respectively. The VOC toluene had a

maximum concentration of 7,000 μg/l. The SOCs 2-methylnaphthalene and naphthalene had maximum concentrations of 110 and 30 μg/l, respectively (Table 8). Maximum soil concentrations at the Eastern Property Area were all found at 3-3.5'.

- **Potential Transport Pathways**

The Mudflat habitat was analyzed at the MF-1 stations for metals, VOCs and SOCs. Concentrations of metals were generally low with maximum concentrations of copper, nickel and lead of 71, 32 and 79 mg/kg, respectively; bis(2-ethylhexyl)phthalate, fluoranthene and pyrene were also detected with maximum concentrations of 860, 430 and 600 μg/kg, respectively. The maximum concentrations of these contaminants were found at 3-4.5'. The primary transport pathway for these contaminants could be with ground water movement.

- **Habitat and Potential Receptors**

A relatively natural benthic invertebrate community is expected in the Mudflat habitat. Burrowing invertebrates and deposit feeders such as Baltic clam (*Macoma balthica)*, amphipods (e.g. *Grandideriella japonica)* and common polychaetes (*Capitella capitata*, *Eteone lighti* and *Neanthes succinea*) could be expected to be present and could be exposed to contaminants found in the sediments. Three species of benthic goby are expected to be resident on the mudflat and several species (e.g., starry flounder, topsmelt) are expected to congregate in feeding aggregations at high tide over the mudflat. These fishes could be exposed to contaminants in the sediments and surface waters. Several species of gulls and shorebirds were observed at the Mudflat habitat, and could be exposed to contaminants in the sediments and surface waters. Opossum and raccoon are expected to forage in and along the mudflat and could be exposed to contaminants present in the sediment or surface water. The snowy plover, a federally listed threatened species,

were sighted feeding along the mudflat and could be exposed to contaminants in the sediments or surface waters.

- **Data Gaps**

Although SWB-9 is some distance from the mudflat, the Eastern Property is a potential source of metals, VOCs and SOCs. Despite high metal concentrations in the Eastern Property soils, sampling of the Mudflat sediments to date has shown concentrations are around or slightly above background concentrations. Moreover, a few SOCs, bis(2-ethylhexyl)phthalate, fluoranthene and pyrene, have been detected (Table 8). The extent of this low-level contamination has not been determined. Although lists of expected species have been compiled, no surveys of fish and benthic invertebrates at the Mudflat habitat have been performed.

4.2.3 Upland Habitat

The Upland habitat is located north of the building complex, across E. Grand Ave. The habitat consists of a flat area with two small freshwater wetlands with cattail and other typical marsh plants. A steep slope bounds the Upland habitat to the north, west and east. To the east and upslope of the Upland habitat is the Former Tank Farm, a designated SWMU and part of the Former Tank Farm/Eastern Property Area of Concern (Figure 5). Discharge from two outfall pipes of unknown, off-Site origin is another source of contaminants to the Upland habitat.

- **Data on Potential Sources**

Table 9 gives the range of contaminants found in the soil and ground water in the Former Tank Farm (Figure 5). Analyses of Former Tank Farm soils for metals, VOCs,

SOCs showed maximum concentrations of copper and nickel were 57 and 30 mg/kg, respectively. Maximum soil concentrations at the Former Tank Farm Area were generally found at 4 to 4.5', except for nickel and chromium which were found at <1.5'. In the ground water, total metal concentraions were detected in the low to sub ppb range; five VOCs, 2-butone, ethylbenzene, xylenes, toluene and chloroform, were detected with maximum concentrations of 230, 120, 4800, 7,000 and 39 μg/l, respectively (Table 9). The chloroform concentrations were detected at station X-1, one of the outfall pipes which drains from an unknown source north of the Site.

- **Potential Transport Pathways**

Maximum nickel concentrations from the Former Solvent Still soils were found in the superficial layer. Therefore the most likely transport pathway to the Upland habitat would be surface water runoff and soil erosion. Maximum copper concentrations were found at depths >5.5' and would likely be transported by the ground water. Two VOCs, toluene and chloroform, were found in the ground water and may migrate to the Upland habitat.

- **Habitat and Potential Receptors**

Several species of reptiles and amphibians common to disturbed as well as natural habitats (e.g., western fence lizard, northern alligator lizard, California tree frog, western toad, and California slender salamander) are expected to be present in the Upland habitat and could be exposed to contaminants in soils, sediments and surface waters. A few birds were seen foraging in the grassy area of the habitat and could be exposed to contaminants in the soil. Ground squirrel were observed, opossum were indicated, and raccoon and striped skunk were expected to be present in the Upland habitat. These mammals could be exposed to contaminants in the soil as well as in the sediment and surface water of the

small freshwater wetlands. A golden eagle, a federally and state listed Endangered Species was observed foraging over Oyster Point or resting on power lines north of the Site. It is possible that this species could be exposed to contaminants through small mammals or fish. However given the small area of the Upland habitat, the wide range of the golden eagle and little evidence at present for bioaccumulation, the potential for exposure is very minimal.

- **Data Gaps**

The soils in the Former Tank Farm had relatively low metal contaminations and the ground water analysis showed the presence two VOCs; no analyses of the soils, sediments and surface water in the Upland habitat have been performed.

4.3 Summary

Three habitats have been identified as being of potential ecological importance. These were evaluated in a field study conducted in November 1993: (1) the marginal wetland located immediately to the south of the Site; (2) the mudflat on the Bay immediately to the east; and (3) the grassy upland area in the northwest portion of the Site.

The Marginal Wetland was discussed in three sections based on differences in biology and potential sources of contamination. The Upper Wetland is located near the MW-21 Area of Concern and the City of South San Francisco storm pipe and these can be considered to represent the primary sources of contaminants. Data on contaminants is limited to soil and ground water samples in the MW-21 Area. These data show some metal, especially lead, and SOC contamination in the soil of the MW-21 Area. The most likely receptors are benthic invertebrates and fishes which may be found in the upper portion of the channel.

The Mid Wetland is south and down-gradient from the Warehouse Area of Concern and down-gradient from the fill to the south and these can be considered to represent the primary sources of contaminants. Data on contaminants is limited to soil and ground water samples from the Warehouse Area and some metal analysis of channel sediments. These data show metal, particularly lead, and SOC contamination in the soil of the Warehouse Area, total lead contamination in the ground water of the Warehouse Area and substantial lead contamination in the fill area. Dissolved lead concentrations in the ground water were 2 orders of magnitude lower than total lead concentrations. The most likely receptors are benthic invertebrates and fishes which may be found in the upper portion of the narrow channel.

The Lower Wetland is just south of the Former Solvent Still Area of Concern and down-gradient from the fill to the south and these can be considered to represent the primary sources of contaminants. Data on contaminants is available for the soil and ground water samples from the Former Solvent Still Area and from the sediment samples from the mouth of the channel (MF-2 series). These data show metal, particularly lead, and SOC contamination in the soil of the Former Solvent Still Area, some metal, especially total lead, and SOC contamination in the ground water of the Former Solvent Still Area and low levels of metal and SOC contamination in the sediments of the channel. Dissolved lead concentrations in the ground water were 4 orders of magnitude lower than total lead concentrations. The most likely receptors are benthic invertebrates and fishes which may be found in the upper portion of the channel and a few waterbirds found in and around the channel.

The Mudflat Habitat is just east of the Former Tank Farm/Eastern Property Area of Concern and this can be considered to represent the primary source of contaminants. Data on contaminants is available for the soil and ground water samples from the Eastern Property Area and from the sediment samples from the mudflat (MF-1 series). These data show metal, particularly lead and zinc, VOC, particularly xylene, and SOC contamination in the soil of the Eastern Property Area, some metal, especially total lead, VOC, particlarly toluene, and SOC contamination in the ground water of the Eastern Property Area and some metal and SOC contamination in the sediments of the mudflat. Dissolved lead concentrations in the ground water

were below the detection limit (<0.04 mg/l). The most likely receptors are benthic invertebrates and fishes which may be found in and above the mudflat and a few shorebirds, including the Snowy Plover, found on and around the mudflat.

The Upland Habitat is just west and down-slope of the Former Tank Farm, a designated SWMU and part of the Former Tank Farm/Eastern Property Area of Concern. Two pipes also discharge from unknown sources into the Upland Habitat. These three sources can be considered to represent the primary sources of contaminants to the Upland Habitat. Data on contaminants is available for the soil and ground water samples from the Former Tank Farm Area. These data show some metal contamination in the soil of the Former Tank Farm Area and some metal, and VOC contamination in the ground water of the Former Tank Farm Area. The most likely receptors are some reptiles, amphibians and mammals commonly found in disturbed areas.

5 References

Evens, J. and G. Page. 1983. *The ecology of rail populations at Corte Madera ecological reserve: with recommendations for management.* Marin Audubon Society, Mill Valley, California.

Gill, R. E., Jr. 1973. *The breeding birds of the South San Francisco Bay Estuary.* Master's Thesis, California State University, San Jose, CA.

Harza. 1994. *Draft Report for Phase II RCRA Facility Investigation, Fuller-O'Brien Paint Facility.*

Jenkins, Sanders & Associates. 1992. *Biological Evaluation of the Cooley Landing Salt Pond and the Surrounding Wetlands, East Palo Alto.*

Jenkins, Sanders & Associates. 1994. *Ecological Assessment of the Tidal Wetland 1990 Bay Road Site East Palo Alto, California.*

Josselyn, M. 1983. *The ecology of San Francisco Bay tidal marches: a community profile.* U.S. Fish and Wildlife Service, Division of Biological Services, Washington, D.C. FWS/OBS-83/23. 102 pp.

Josselyn, M. N. and J. W. Buchholz. 1984. *Marsh restoration in San Francisco Bay: A guide to design and planning.* Technical report#3, Tiburon Center for Environmental Studies, San Francisco State University. 104 pp.

Mark Group. 1989. *San Bruno Channel Fill Investigation, South San Francisco, California.*

Miller, D. J. and R. N. Lea. 1972. Guide to the Coastal Marine Fishes of California. *Fish Bulletin*. 157, 1-249.

Natural Diversity Data Base (NDDB). 1994. California Department of Fish and Game. Print out for the area around Pt. Bruno, California. Search conducted January, 1994.

Nichols, F. H. and M. N. Pamatmat. 1988. *The ecology of soft-bottom benthos of San Francisco Bay California: A community profile.* U.S. Fish and Wildlife Service Biological Report 85 (719). 74 pp.

Shellhammer, H. S., R. Jackson, W. Davilla, A.M. Gilroy, H. T. Harvey, and L. Simons. 1982. Habitat Preferences of Salt Marsh Harvest Mice *Reithrodontomys raviventris. Wasmann J. Biol.* 40(1-2), 102-114.

Shellhammer, H. S., R. Duke, H. T. Harvey, V. Jennings, V. Johnson, and M. Newcomer. 1988. Salt Marsh Harvest Mice in the Diked Salt Marshes of Southern San Francisco Bay. *Wasmann J. Biol.* 46(1-2), 89-103.

Woods, E. 1981. Fish Utilization. in *The Hayward Regional Shoreline Marsh Restoration: Biological Succession During the First Year Following Dike Removal; Tech. Rept. #1.* T. Miesen, M. Josselyn (eds.). 178 pp.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer and M. White (eds). 1990. *California Wildlife, Vol. II, Birds.* California State Wildlife Habitat Relationship System. Department of Fish and Game. Sacramento, California. 731 pp.

Table 1. Common benthic invertebrates of channels and mudflats of the San Francisco Bay.

Annelida:	
	Capitella capitata
	Eteone lighti
	Neanthes succinea
Crustacea:	
	Corophium insidiosum
	Grandidierella japonica
Mollusca:	
	Ischadium dimissum
	Macoma balthica
	Mya arenaria

Table 2. **List of species of fish commonly occurring over mudflats and in channels in salt marshes of South San Francisco Bay (Miller and Lea, 1972; Jenkins, Sanders and Associates, 1994; Wood 1981).**

Leopard shark	(*Triakis semifasciata*)
Northern anchovy	(*Engraulis mordax*)
Threespine stickleback	(*Gasterosteus aculeatus*)
Rainwater killifish	(*Lucania parva*)
Mosquitofish	(*Gambusia affinis*)
Topsmelt	(*Atherinops affinis*)
Staghorn sculpin	(*Leptocottus armatus*)
Shiner surfperch	(*Cymatogaster aggregata*)
Yellowfin goby	(*Acanthogobius flavimanus*)
Longjaw mudsucker	(*Gillichthys mirabilis*)
Arrowgoby	(*Clevelandia ios*)
Chameleon goby	(*Tridentiger trigoncephalus*)
Starry flounder	(*Platichthys stellatus*)

Table 3a. Avifauna observed at the Fuller O'Brien facility November 9 and 10, 1993.

Species	Behavior	Number Observed		Habitat	Habitat Description
		Day 1	Day 2	D1/D2	D1/D2
Black-bellied plover	Feed	3	4	M/M	mudflats/mudflats
Killdeer	Feed	0	4	--/M	--/mudflats
Snowy plover	Feed	0	2	--/M	--/mudflats
Whimbrel	Feed	1	1	M/M	mudflats/mudflats
Willet	Feed	1	1	M/M	mudflats/mudflats
Western sandpiper	Feed	1	15	M/M	mudflats/mudflats
Sanderling	Feed	0	10	--/M	--/mudflats
Western gull	Feed	28	50	M/M	mudflats/mudflats
Ring-billed gull	Feed	14	10	M/M	mudflats/mudflats
Herring gull	Feed	12	4	M/M	mudflats/mudflats
Double-crested cormorant	Feed	8	??	O/O	water off mudflats/water off mudflats
Pelagic cormorant	Feed	0	??	--/O	water off mudflats
Mourning dove	Feed/Perch	1	7	F/U	fill above marginal wetland/disturbed upland
Western meadowlark	Feed	0	15	--/F,U	--/fill above marginal wetland, disturbed upland
Belted kingfisher	Fly	0	1	--/U	--/freshwater wetland
Mockingbird	Perch	0	1	--/U	--/freshwater wetland
Starling	Perch	0	5	--/U	--/disturbed upland
Brewer's blackbird	Perch	0	12	--/U	--/disturbed upland
Song sparrow	Feed	0	7	--/U	--/disturbed upland
Golden-crowned sparrow	Feed	0	16	--/U,W	--/disturbed upland, marginal wetland
White-crowned sparrow	Feed, bathe	0	10	--/U,W	--/disturbed upland, marginal wetland
Golden eagle	Fly	1	1	U,W/U,W	flying over site, roosting in upland/flying over site, roosting on fill
Yellow-rumped warbler	Feed/Perch	2	11	F/W	fill above marginal wetland/marginal wetland
House finch	Feed	10	11	F/W	fill above marginal wetland/marginal wetland
Mallard	Sit	0	2	--/W	--/tidal pond
Snowy egret	Stand	0	1	--/W	--/tidal pond
Rock dove	Fly Over	3	0	W/--	above marginal wetlands and fill area/--
Water pipit	Feed	7	0	W/--	rocks and debris between mudflat and wetland/--
Black phoebe	Feed	0	1	--/W	--/marginal wetland

Day 1 - November 9, 1993
Day 2 - November 10, 1993
D1/D2 - Day 1/Day 2
M - Mudflat Habitat
U - Upland Habitat
W - Marginal Wetland Habitat
F - Fill south of Marginal Wetland Habitat
O - Open water in Bay

Table 3b. Avifauna expected but not observed at the Fuller O'Brien facility November 9 and 10, 1993.

Green-winged teal	Long-billed dowitcher
Sharp-shinned hawk	Dunlin
Cooper's hawk	Mew gull
Red-tailed hawk	Loggerhead shrike
American kestrel	Common crow
Semipalmated plover	House sparrow
Marbled godwit	Red-winged blackbird
Ruddy turnstone	Savannah sparrow
Black turnstone	

Table 4. **Special status species listed in the Natural Diversity Data Base (NDDB) as occurring on or in the vicinity of the Fuller-O'Brien Site.**

SPECIES	LISTING STATUS	
	Federal	State
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	Candidate 1	None
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	Endangered	Endangered
Salt marsh common yellowthroat (*Geothlypis trichas sinuosa*)	Candidate 2	None
Western snowy plover (*Charadrius alexandrinus nivosus*)	Candidate 2	None
California clapper rail (*Rallus longirostris obsoletus*)	Endangered	Endangered
California least tern (*Sterna antillarum browni*)	Endangered	Endangered
San Francisco Owl's-Clover (*Triphysaria floribunda*)	Candidate 2	None

N.B. Legal Status is as follows:

FED: Endangered = Federally Listed Endangered
FED: Threatened = Federally Listed Threatened
FED: Candidate 1 = Candidate for Federal Listing, Category 1
FED: Candidate 2 = Candidate for Federal Listing, Category 2
CA: Endangered = California Listed Endangered
CA: Threatened = California Listed Threatened
CA: Rare = California Listed Rare
CA: Candidate = Same as Federal Proposed Endangered

Table 5. Range of contaminant concentrations in the MW-21 Area *.

Analyte	MW-21 Soil & Sediment	MW-21 Ground Water Total	MW-21 Ground Water Dissolved
Metals (1)			
Silver	**0.1** to **0.4**	<0.005 to **0.009**	<0.002
Arsenic	**3** to **12**	<0.005 to **0.25**	**0.0052** to **0.047**
Cadmium	<0.1	<0.001 to **0.02**	<0.005
Chromium	**57** to **200**	<0.005 to **9**	<0.004
Copper	**13** to **240**	<0.01 to **1.3**	<0.01
Nickel	**76** to **310**	<0.01 to **17**	<0.01 to **0.0122**
Lead	**10** to **1,000**	<0.002 to **1.8**	<0.002
Zinc	**26** to **92**	<0.01 to **2.66**	**0.009**
VOCs (2)			
Acetone	<100	<10 to **140**	--
Benzene	<5	<1 to **37**	--
Ethylbenzene	<5	<1 to **180**	--
Toluene	<5	<1 to **330**	--
Total Xylenes	<10	<1 to **680**	--
SOCs (2)			
Anthracene	<33 to **760**	<10	--
Benzoic Acid	<1600	<10 to **79**	--
Benzo(a)anthracene	<330 to **9,100**	<10	--
Bis(2-ethylhexyl)phthalate	<330 to **29,000**	<5 to **21**	--
Chrysene	<330 to **10,000**	<10	--
Fluoranthene	<330 to **20,000**	<10	--
Isophorone	<330	<5 to **430**	--
Naphthalene	<33 to **8,200**	<5 to **64**	--
Phenanthrene	<33 to **58**	<10	--
Pyrene	<33 to **110,000**	<10	--
2,4-Dimethylphenol	<330	<5 to **20**	--
Phenol	<330	**0.18** to **150**	--

(1) - Soil and sediment concentrations in mg/kg (ppm), ground water concentrations in mg/l (ppm)
(2) - Soil and sediment concentrations in ug/kg (ppb), ground water concentrations in ug/l (ppb)

* - Stations Included: MW-21, OPF-21, SWB-3, SWB-4, WB-1

Data extracted from Tables 6,7,8,10,11 and 12 from Draft Phase II RFI Report .
Only data from 1987 to present was used.

Table 6. Range of contaminant concentrations in the Warehouse Area * and adjacent marsh station.

Analyte	Warehouse Soil & Sediment	Warehouse Ground Water Total	Warehouse Ground Water Dissolved	Marsh Station Sediment E-2
Metals (1)				
Silver	**0.1** to **0.5**	<0.005 to **0.007**	<0.005	**0.4**
Arsenic	**2** to **9**	<0.002 to **0.07**	<0.002 to **0.006**	**8**
Cadmium	<0.1 to **5.9**	<0.005 to **0.013**	<0.005	**0.5**
Chromium	**3** to **74**	<0.01 to **1.8**	<0.01	**75**
Copper	**16** to **120**	<0.01 to **0.88**	<0.01	**83**
Nickel	**4** to **190**	<0.01 to **3**	<0.01 to **0.01**	**150**
Lead	**1** to **37,000**	<0.04 to **200**	<0.04 to **0.75**	**810**
Selenium	<2 to **6**	<0.004	<0.004	<2
Zinc	**10** to **360**	**0.06** to **2.6**	**0.011** to **0.05**	**180**
VOCs (2)				
Acetone	<100 to **150**	<100	--	--
Ethylbenzene	<5 to **5**	<5	--	--
Total Xylenes	<10 to **34**	<10	--	--
SOCs (2)				
Acenaphthene	<330 to **5,100**	<10	--	--
Anthracene	<330 to **6,100**	<10	--	--
Benzo(a)anthracene	<330 to **4,100**	<10	--	--
Benzo(b)fluoranthene	<330 to **4,100**	<10	--	--
Benzo(k)fluoranthene	<330 to **2,700**	<10	--	--
Benzo(a)pyrene	<330 to **3,300**	<10	--	--
Bis(2-ethylhexyl)phthalate	<330 to **3,500**	<10	--	--
Chrysene	<330 to **4,400**	<10	--	--
Fluoranthene	<330 to **14,000**	<10	--	--
Fluorene	<330 to **2,900**	<10	--	--
Naphthalene	<330 to **1,700**	<10	--	
Phenanthrene	<330 to **8,100**	<10	--	
Pyrene	<330 to **14,000**	<10	--	

(1) - Soil and sediment concentrations in mg/kg (ppm), ground water concentrations in mg/l (ppm)
(2) - Soil and sediment concentrations in ug/kg (ppb), ground water concentrations in ug/l (ppb)

* - Stations Included: PM-2, PM-7, PM-8, SWB-5, SWB-7, SWB-8

Data extracted from Tables 6,7,8,10,11 and 12 from Draft Phase II RFI Report .
Only data from 1987 to present was used.

Table 7. Range of contaminant concentrations in the Former Solvent Still Area * and adjacent mudflat.

Analyte	Former Solvent Still Soil & Sediment	Former Solvent Still Ground Water Total	Former Solvent Still Ground Water Dissolved	Mudflat Sediment 2a	2b	2c
Metals (1)						
Silver	**0.1** to **0.3**	<0.002 to **0.05**	<0.005	<0.1	**0.1**	**0.2**
Arsenic	<1 to **52**	**0.003** to **1.2**	<0.002 to **0.021**	**2**	**2**	**2**
Cadmium	<0.1 to **1.5**	<0.002 to **0.82**	<0.003	<0.1	<0.1	<0.1
Chromium	**71** to **200**	<0.004 to **38**	<0.005	**15**	**20**	**32**
Copper	**24** to **69**	<0.01 to **5.8**	<0.01 to **0.023**	**65**	**39**	**160**
Nickel	**66** to **250**	**0.0082** to **61**	<0.01	**16**	**22**	**45**
Lead	<20 to **1,200**	**0.0131** to **643**	**0.007** to **0.018**	**33**	**40**	**18**
Selenium	<2 to **4**	<0.002	<0.002	<2	<2	<2
Zinc	**37** to **381**	<0.002 to **100**	<0.01 to **0.2**	**55**	**48**	**160**
VOCs (2)						
Acetone	<100	<20 to **30**	–	<100	<100	<100
Benzene	<5	<1 to **190**	–	<5	<5	<5
2-Butanone (MEK)	<10 to **10**	<10 to **17**	–	<100	<100	<100
Carbon Disulfide	<5 to **100**	<1 to **1**	–	<10	<10	<10
Ethylbenzene	<5	<1 to **300**	–	<5	<5	<5
Toluene	<5	<5	–	<5	<5	<5
Total Xylenes	<5 to **12**	<1 to **4,100**	–	<10	<10	<10
SOCs (2)						
Acenaphthene	<330	<10 to **50**	–	<330	<330	<330
Anthracene	<330	<10 to **120**	–	<330	<330	<330
Benzoic Acid	**250**	<50	–	<1,600	<1,600	<1,600
Bis(2-ethylhexyl)phthalate	<300 to **3,000**	<10	–	<330	<330	<330
Butylbenzyl phthalate	<300 to **1,800**	<10	–	<330	<330	<330
Di-n-butylphthalate	<300 to **1,900**	<10 to **390**	–	<330	<330	<330
Di-n-octylphthalate	<300 to **2,000**	<10	–	<330	<330	<330
Fluoranthene	**180**	<10 to **66**	–	<330	**770**	<330
2-Methylnaphthalene	<300 to **500**	<10 to **620**	–	<330	<330	<330
Naphthalene	<300 to **5,000**	<10 to **480**	–	<330	<330	<330
Nitrobenzene	<300 to **1,500**	<10	–	<1,600	<1,600	<1,600
Phenanthrene	<300 to **560**	<10 to **110**	–	<330	**530**	<330
Pyrene	<300	<10	–	<330	**720**	<330
2,4-Dimethylphenol	<300 to **460**	<10 to **38**	–	<330	<330	<330

(1) - Soil and sediment concentrations in mg/kg (ppm), ground water concentrations in mg/l (ppm)
(2) - Soil and sediment concentrations in ug/kg (ppb), ground water concentrations in ug/l (ppb)

* - Stations Included: SB-1, PM-9, SWB-1, SWB-2, SWB-6

Data extracted from Tables 6,7,8,10,11 and 12 from Draft Phase II RFI Report .
Only data from 1987 to present was used.

Table 8. Range of contaminant concentrations in the Eastern Property Area* and adjacent mudflat.

Analyte	Eastern Propety Soil & Sediment	Eastern Propety Ground Water Total	Eastern Propety Ground Water Dissolved	Mudflat Sediment 1a	1b	1c
Metals (1)						
Silver	9 to 37	<0.005 to 0.18	<0.005	0.3	0.2	0.3
Arsenic	16 to 27	0.005 to 6	0.005	4	4	4
Cadmium	3.7 to 14	<0.005 to 0.09	<0.005	0.2	0.1	0.2
Chromium	220 to 290	<0.01 to 11	<0.01	31	34	36
Copper	200 to 230	<0.01 to 12	<0.01	67	47	71
Nickel	72 to 110	<0.01 to 15	<0.01	26	28	32
Lead	19,000 to 28,000	<0.04 to 100	<0.04	79	75	76
Zinc	10,000 to 11,000	0.1 to 62	0.1	100	80	95
VOCs (2)						
Ethylbenzene	<500 to 600	<0.2 to 130	–	<5	<5	<5
Toluene	<500	<0.2 to 7,000	–	<5	<5	<5
Total Xylenes	<1,000 to 14,000	<0.4 to 170	–	<10	<10	<10
SOCs (2)						
Acenaphthene	<1,700 to 43,000	14	–	<330	<330	<330
Anthracene	<1,700 to 24,000	<10	–	<330	<330	<330
Benzo(a)anthracene	<1,700 to 8,400	<10	–	<330	<330	<330
Benzo(b)fluoranthene	<1,700 to 11,000	<10	–	<330	<330	<330
Bis(2-ethylhexyl)phthalate	<1700	<10	–	690	860	590
Chrysene	<1,700 to 9,900	<10	–	<330	<330	<330
Dibenzofuran	<1,700 to 23,000	<10	–	<330	<330	<330
Fluoranthene	<330 to 50,000	<10	–	430	<330	<330
Fluorene	<330 to 36,000	<10	–	<330	<330	<330
2-Methylnaphthalene	<330 to 75,000	<10 to 110	–	<330	<330	<330
Naphthalene	<330 to 73,000	<10 to 30	–	<330	<330	<330
Phenanthrene	<330 to 83,000	14	–	<330	<330	<330
Pyrene	<330 to 28,000	<10	–	600	<330	430

(1) - Soil and sediment concentrations in mg/kg (ppm), ground water concentrations in mg/l (ppm)
(2) - Soil and sediment concentrations in ug/kg (ppb), ground water concentrations in ug/l (ppb)

* - Stations Included: SWB-9, WB-4, WB-5, WB-6

Data extracted from Tables 6,7,8,10,11 and 12 from Draft Phase II RFI Report .
Only data from 1987 to present was used.

Table 9. Range of contaminant concentrations in the Former Tank Farm Area *.

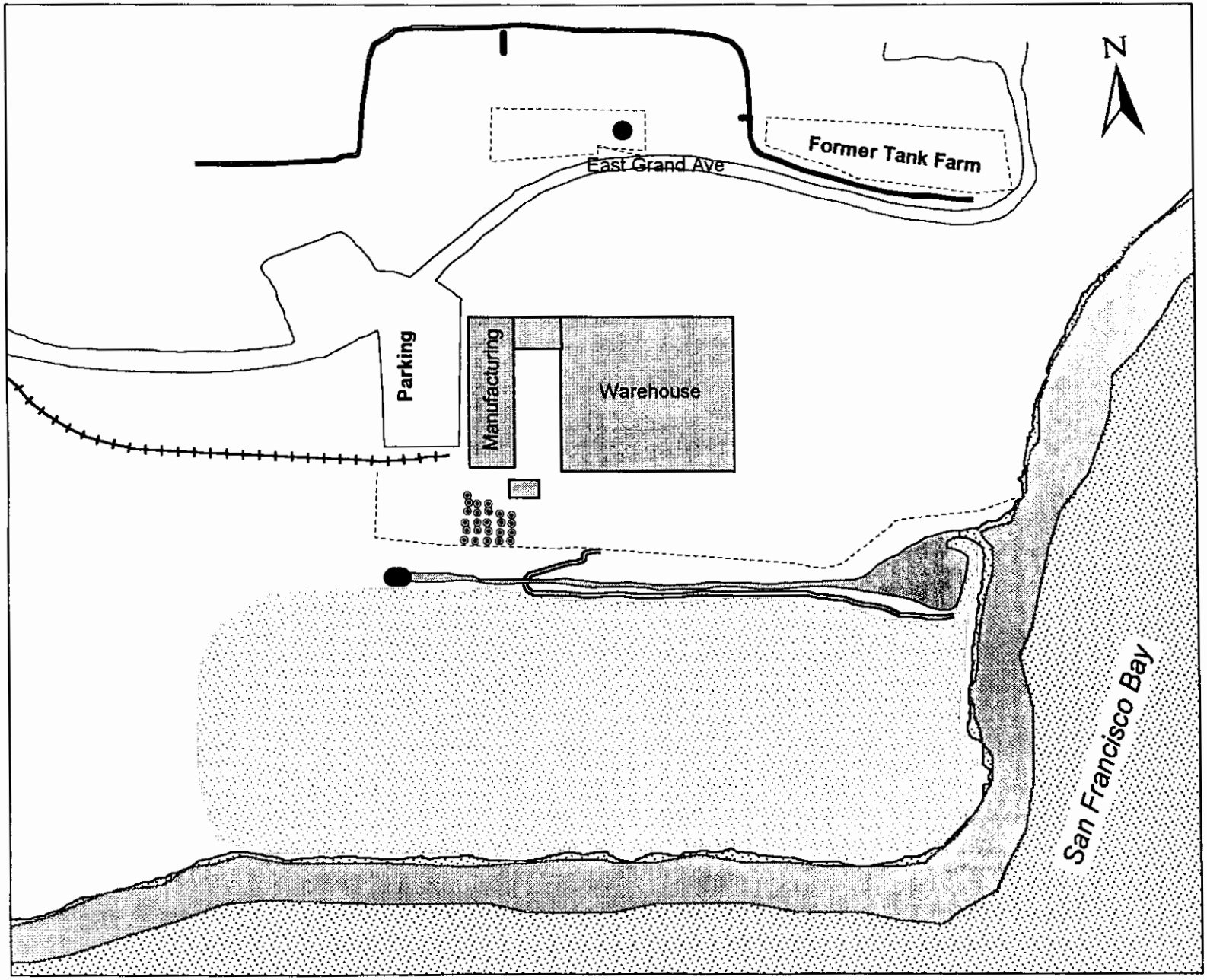
Analyte	Former Tank Farm Soil & Sediment	Former Tank Farm Ground Water Total	Former Tank Farm Ground Water Dissolved
Metals (1)			
Silver	**0.1** to **0.2**	<0.005	--
Arsenic	<1	<0.002 to **0.01**	--
Chromium	**22** to **29**	<0.01 to **0.63**	--
Copper	**40** to **57**	<0.01 to **0.52**	--
Nickel	**28** to **30**	<0.01 to **0.52**	--
Lead	**10** to **11**	<0.04 to **0.64**	--
Zinc	**65** to **80**	<0.005 to **1.1**	--
VOCs (2)			
2-Butone	**230**	--	
Chloroform	<5	<5 to **39**	--
Ethylbenzene	**120**	--	
Toluene	<5	<5 to **7,000**	--
Total Xylenes	**1100** to **4800**	--	

(1) - Soil and sediment concentrations in mg/kg (ppm), ground water concentrations in mg/l (ppm)
(2) - Soil and sediment concentrations in ug/kg (ppb), ground water concentrations in ug/l (ppb)

* - Stations Included: B-12, B-13, SWB-10, W-6, W-7, X-1

Data extracted from Tables 6,7,8,10,11 and 12 from Draft Phase II RFI Report .
Only data from 1987 to present was used.

Fuller-O'Brien Site Map



Legend

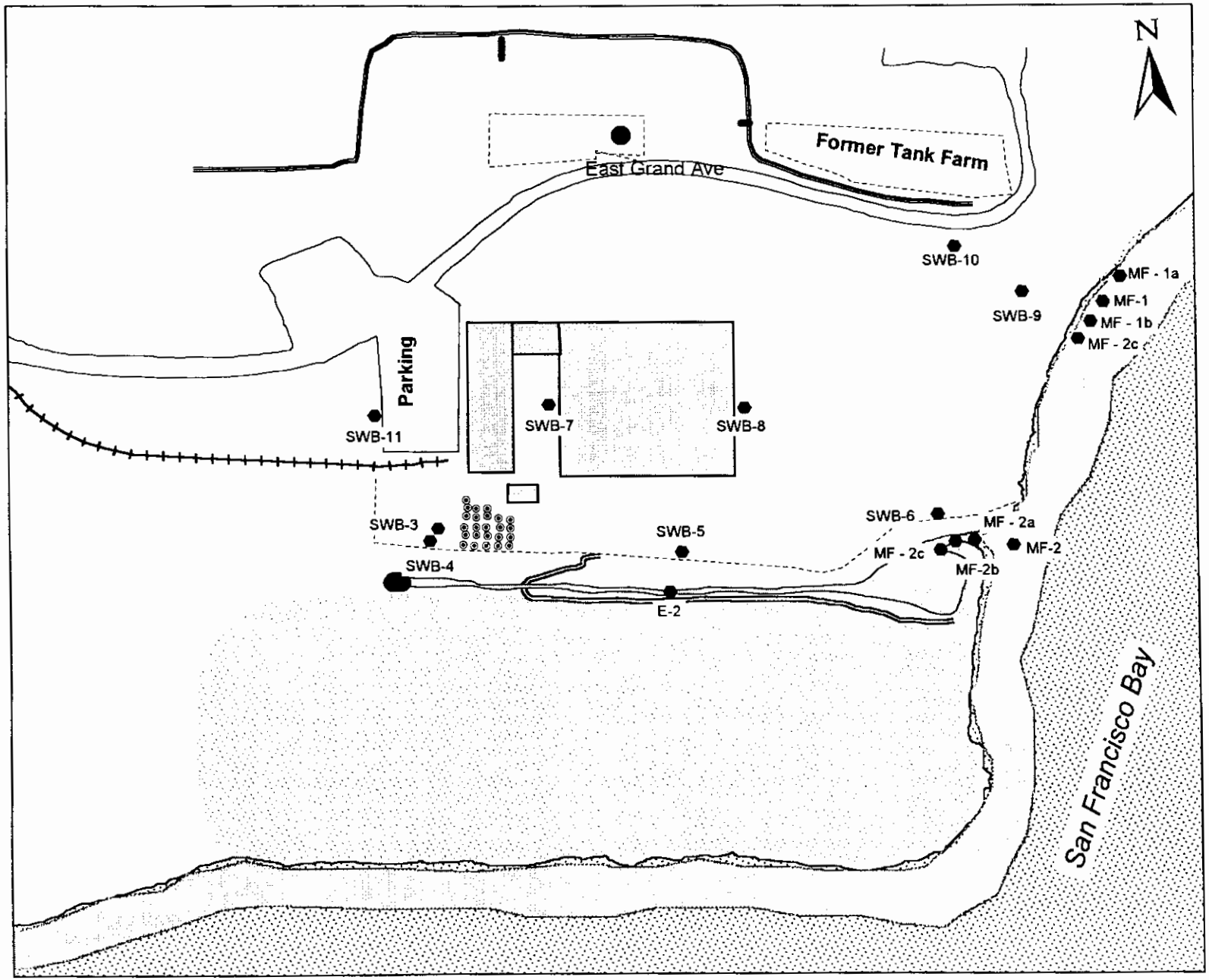
- Buildings
- Fill Area
- Fence
- Large Tank
- Tanks
- Railroad
- Ridge
- 15 ft isocline
- Slough
- Mudflat
- Drainage Pipe
- Storm Pipe

Scale

0 Feet 400

FOB
Biological Evaluation
JSA **Fig. 1**

Fuller O'Brien Station Locations



Legend

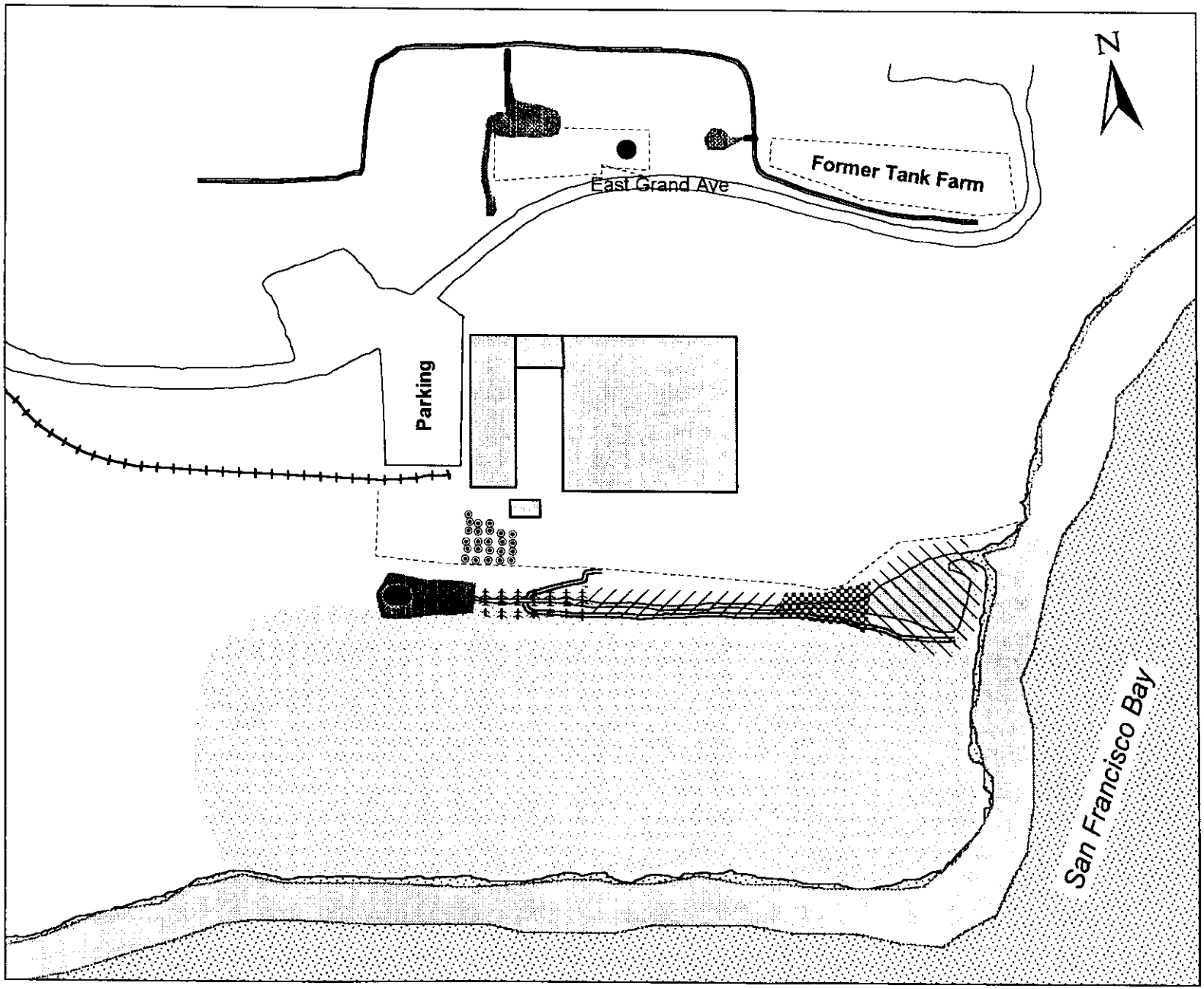
- Buildings
- Fill Area
- Ridge
- 15 ft isocline
- Slough
- Mudflat
- Drainage Pipe
- Storm Pipe
- Stations

Scale

0 Feet 400

FOB
Biological Evaluation
JSA **Fig. 2**

Fuller-O'Brien Vegetation Survey



Legend

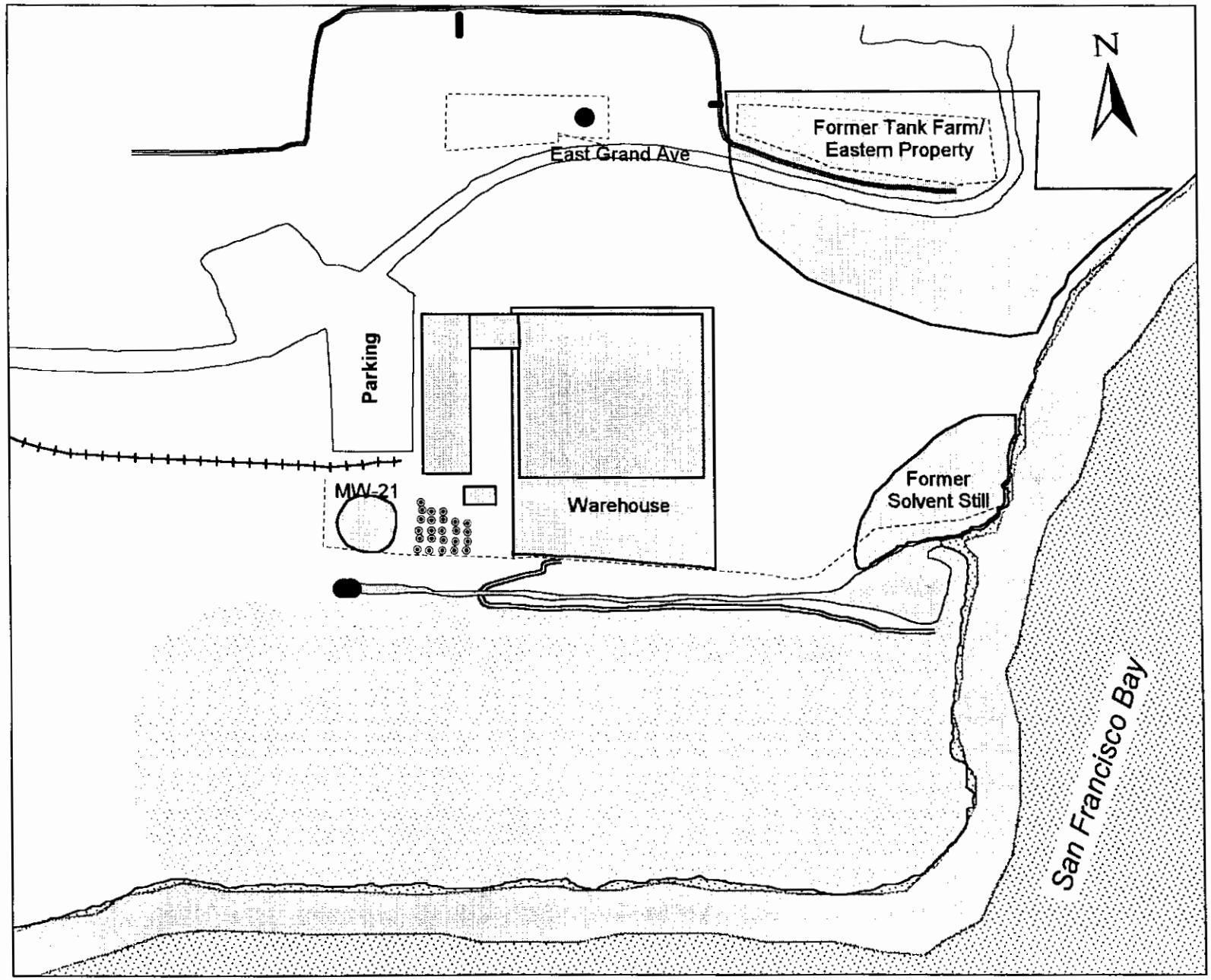
- Buildings
- Fill Area
- Ridge
- 15 ft isocline
- Slough
- Cattail
- Giant Bullrush
- Saltgrass
- Saltgrass & Pickleweed
- Pickleweed
- Mudflat
- Drainage Pipe
- Storm Pipe

Scale

0 Feet 400

FOB
Biological Evaluation
JSA **Fig. 3**

Fuller-O'Brien Areas of Concern



Legend

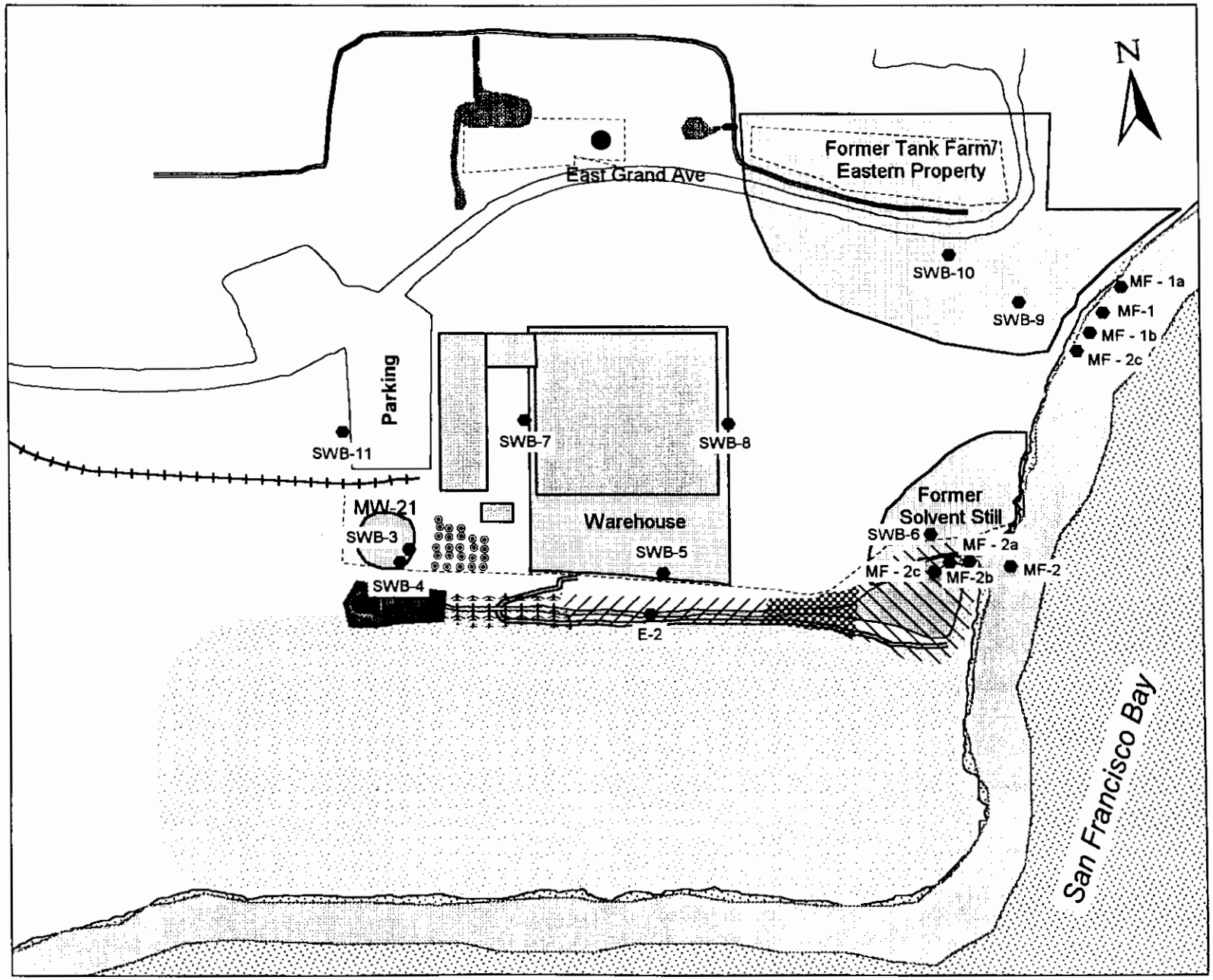
- Areas of Concern
- Fill Area
- Buildings
- Ridge
- 15 ft isocline
- Slough
- Mudflat
- Drainage Pipe
- Storm Pipe

Scale

0 Feet 400

FOB
Biological Evaluation
JSA **Fig. 4**

Fuller-O'Brien Relationship Map



Legend

- Areas of Concern
- Fill Area
- Buildings
- Ridge
- 15 ft isocline
- Slough
- Cattail
- Giant Bullrush
- Saltgrass
- Saltgrass & Pickleweed M
- Pickleweed
- Mudflat
- Drainage Pipe
- Storm Pipe
- Stations

Scale

0 Feet 400

FOB
Biological Evaluation
JSA **Fig. 5**

APPENDIX A. LEAD ISOTOPE RATIO STUDIES OF SEDIMENTS FROM THE FULLER- O'BRIEN SITE.

1 Introduction

Various studies have utilized the ratios of Pb206 and Pb207 isotopes as a unique tracer to serve as a "fingerprint" for distinguishing sources of lead in atmospheric emissions and mining ore cuttings. (Sturges and Barrie, 1987, Hinners et al., 1987). Lead isotopes are particularly useful for fingerprinting because lead from various geological formations differ in lead isotope composition. These differences are due to the radioactive decay of thorium (range in atomic mass of 224-234) and uranium (range in atomic mass of 227-240) yields different lead isotopes. Because thorium and uranium are not uniformly distributed in nature, the lead isotopes resulting from the decay process are also distributed in a non-uniform manner throughout the earth's crust. The present study investigates the potential for studying the Pb206/Pb207 isotope ratio as a tool to assist in differentiating historical sources of lead contamination in sediments from sites adjacent to the Fuller-O'Brien Paint manufacturing facility.

Sediments in the environment will retain the isotopic composition of the geological formations from which they were derived. Therefore there is the potential to distinguish source materials by examining the isotopic ratios. The ratios of Pb206 to Pb207 isotopes were observed to range from 1.089 to 1.446 in three different mining ores and from 1.480 to 1.828 in three different foundry ash samples (Hinners et al., 1987; numbers recalculated from reported percent change in Pb207/Pb206 ratios relative to reference materials). Canadian sources of Pb for gasoline additives had Pb206/Pb207 ratios ranging from 0.92 to 1.19 whereas U.S. sources of Pb for gasoline additives had Pb206/Pb207 ratios ranging from 1.04 to 1.39 (Sturges and Barrie, 1987). In atmospheric measurements in Europe, Pb206/Pb207 ratios ranged from 1.10 - 1.18

during the years 1966 to 1991 (Grousset et al, 1994). In summary, maximum differences in Pb206/Pb207 ratios of 0.35 were observed in three mining ore samples though differences in this isotope ratio of 0.08 were considered statistically significant at the 95% level (Hinners et al, 1987) and served as diagnostic indicators of sources in mining ore samples. Maximum differences in Pb206/Pb207 ratios of 0.08 were observed for atmospheric samples though smaller differences in this isotope ratio were also considered significant .

1.1 Site Overview

The Fuller-O'Brien Paint manufacturing facility is located at 450 East Grand Avenue in South San Francisco, CA (Figure 1). The approximately 28-acre site (the Site) is bounded by commercial properties on the north and west, the San Francisco Bay (the Bay) on the east and by marginal wetlands on the south. The Site has been used as a paint manufacturing facility for over 100 years; the O'Brien Corporation (O'Brien) has been operating the facility since 1967 and purchased the property in 1970.

Prior to 1965 the area south of the O'Brien fence line was part of the San Francisco Bay and used as a deep water shipping channel called the San Bruno Channel. It was filled for commercial development by Arthur Haskins, a private owner and contractor, from the mid 1960's to the mid 1970's. The approximately 3.5 million cubic yards of imported fill used was from industrial and construction debris and sand. Since the mid 1970's, a small tidal channel and marginal wetland has developed in this fill area (Figure 1). At the head of the narrow channel there is a large City of South San Francisco storm drain which discharges surface rain runoff and dry weather urban runoff (Mark Group, 1989). The western end of the wetland opens to San Francisco bay and is subject to tidal influx from the Bay.

The sediments of the channel and marginal wetland have been sampled extensively and analyzed for trace metal contamination (Mark Group, 1989). These analyses revealed elevated concentrations of lead in sediments from the middle portion of the marsh, particularly those

associated with the "E Transect." The E transect consists of a series of stations located along a north-south transect, across the marginal wetland and extended into the landfill region above the wetland (See Figure 1, present report; Figures 6-1, 6-2, 6-3, Mark Group report, 1989). This lead contamination along this transect was highest in soils from the stations at the higher elevations of the fill to the south of the wetland and it was suggested that the fill had served as the source for elevated concentrations of lead in sediments of the tidal wetland (Mark Group, 1989). However, the contaminated area of the marsh is also located down gradient from the Warehouse area which is one of the Solid Waste Management Units (SWMUs) of the Fuller O'Brien Site. This area was defined as a SWMU largely due to elevated concentrations of lead in soils (Ratech Resources, 1993).

1.2 Purpose of the Study

The primary purpose of this study was to determine if lead isotopic ratios could be used to distinguish the sources of lead contamination in sediments from the middle section of the marginal wetland.

1.3 Study Design

In designing the study it was necessary to determine the range of Pb206/Pb207 isotope in areas representing potential sources of contamination and areas representing background concentrations for the sediments and soils of the Western shore of the San Francisco Bay. These data were then compared against the Pb206/Pb207 isotope ratios for sediments from the channel of the marginal wetland, the mudflats east of the site and the mouth of the marginal wetland. The sampling locations and underlying rationale for their selection are discussed in the following sections.

1.3.1 Defining Isotopic Ratios in Areas Representing Potential Sources of Lead to the Marginal Wetland

1.3.1.1 Offsite Sources

Data from the San Bruno Channel Fill Study indicated that fill materials located to the south of the marginal wetland represented a major off site source of lead for the marginal wetland. Fill material at elevations immediately above that of the marginal wetland had concentrations of lead in the 4,160 to 16,100 range (Mark Group, 1989). The highest concentrations of lead in the fill area were observed at the two southern most stations from the E transect, E-3 and E-4, which were located just above the area of the marginal wetland showing elevated concentrations of lead (e.g. E-2, Figure 1). Therefore sediments from Stations E-3 and E-4 were used to define the isotopic ratios for off site lead from the San Bruno Channel fill material.

For the Fuller O'Brien Site, the Warehouse Area mentioned above was the primary area of focus (Figure 1). The Warehouse Area is a SWMU which lies just to the north of the mid portion of the tidal wetland. The current warehouse, built in 1972, is used to store finished products including a variety of paints (Figure 1). It is located on an area previously used for white lead works (1898 to 1907) and red lead works (1907 to 1913). The area also contained pigment storage buildings which, along with the lead works, were removed in 1969. This SWMU is one of five Areas of Concern identified by Ratech Resources in their May 28, 1993, *Data Needs Letter for a Risk Assessment/Ecological Evaluation.*

Three stations were chosen for evaluating the isotopic ratios for lead at this site. The first two, SWB-7 and SWB-8 are located immediately west and east of the warehouse, respectively (Figure 1). Previous sampling of these sites (Harza, 1994) revealed substantially elevated concentrations of lead in sub-surface soils of SWB-7 (32,000 mg/kg at 5-5.5' depth) and SWB-8 (21,000 mg/kg at 5-5.5' depth). A third station, SWB-5 was established along the southern boundary of the O'Brien property. This station is down gradient from the primary areas of lead contamination in the warehouse Area and immediately up gradient from the E transect of the marginal wetland (Figure 1).

Lead isotopic ratios were also evaluated at two additional SWMUs at the Fuller O'Brien Site with elevated concentrations of lead. This information serves to evaluate the range of Pb isotope ratios in sediments located at the Fuller-O'Brien site and surrounding areas. The first of these, the Former Tank Farm SWMU/Eastern Property Area of Concern, is located at the eastern margin of the Site, above the shoreline and mudflats of the Bay (Figure 1). Sampling carried out during the Remedial Facilities Investigation (RFI) had demonstrated elevated concentrations of lead at SWB-9 (Harza, 1994). The other SWMU evaluated in this study was the Former Solvent Still Area located at the southeast corner of the Site above the mouth of the marginal wetland. Station SWB-6 was found to have elevated concentrations of lead during the RFI (Harza, 1994). These stations were resampled during the current study and sediments were analyzed for total lead and lead isotopic ratios.

1.3.2 Defining Isotopic Ratios in Sediments of the Marginal Wetland

Station E-2 of the marginal wetland area is located in the center of the narrow channel. Historical sampling has confirmed elevated lead concentrations (21,200 mg/kg at 3' depth; Mark Group, 1989).

1.3.3 Defining Ambient Isotopic Ratios of Lead in Uncontaminated Soils and Sediments.

Several sites were also sampled to help define the ambient range of isotopic ratios of lead in soils and sediments in the vicinity of the Fuller O'Brien Site. A station designated SWB-11 was sampled to define lead isotopic ratios in upland soils. This station is located west of the parking lot along the western boundary of the site and was believed to be beyond the influence of historic lead contamination at the Site (Figure 1). Sampling carried out during the San Bruno Channel Fill Study suggested that mudflats east of the site and sediments from the mouth of the marginal wetland did not have elevated concentrations of lead. Therefore, a series of four stations were established in the mudflats bordering San Francisco Bay (MF-1, MF-1-1, MF-1d and MF-1f) to help define isotopic ratios of lead along the bay (Figure 1). An additional series of stations was

established along the mouth of the slough for the marginal wetland (MF-2, MF-2b, MF-2e, MF-2f; Figure 1) to define isotopic ratios of lead in an area with ambient concentrations of lead. Samples from each of these stations were analyzed for total lead as well as lead isotopic ratios to assure that they represented ambient lead levels.

2 Methodology

2.1 Quality Control Procedures

Standard laboratory protocols for sample preparation (sediment homogenization and acid digestion), sample analysis using ICP/MS techniques, and complete itemization of quality control and quality control procedures are summarized in the Jenkins, Sanders & Associates (JSA) Quality Assurance Project Plan (QAPP) and in the Molecular Ecology Institute, California State University, Long Beach (MEI) Quality Control/Quality Assurance handbook. These protocols follow guidelines described in U.S. EPA, 1979 and U.S. EPA, 1990. Methods for sample handling and processing are consistent with standard methods described in EPA 600/4-79-020 for general laboratory procedures (EPA, 1983) and employ standard GLP and GALP procedures.

Clean techniques were followed for all aspects of sample handling, processing, digestion, homogenization and final analyses for trace elements which incorporate appropriate precautions for minimizing the introduction and exposure of samples to extraneous trace element concentrations. All glassware, sample containers, and materials were subjected to a rigorous 4-day procedure of acid washing in metal-free nitric acid. When possible, materials were utilized which were guaranteed as sterile and metal-free. Respective acids were certified as "low-metal" and all solutions were prepared using Milli-Q quality (18 Mega-ohm) distilled deionized water.

2.2 Sample receipt

Sediment cores were collected by Harza at the site during two distinct time periods, December 9, 1993 through January 17, 1994 and July 26, 1994 through July 29, 1994. These two periods are hereafter referred to as December 1993 and July 1994, respectively. Sediments were collected using brass core sampling devices . Approximately 15 cm of the upper sediment layer were sampled in the coring device, immediately transferred to a cooler with ice and shipped to JSA. Samples were transferred from JSA to MEI for subsequent processing as described below.

Chain of custody forms were used to document all aspects of sample transfer.

Appendix Table 1 summarizes the number of sediment cores samples and received by JSA. A total of sixteen (16) cores were received from the December 1993 period and eighteen (18) cores were received from the July 1994 sampling period. During the December 1993 sampling period triplicate sediment cores were collected in the field for stations SWB-7 and SWB-11. For the remainder of samples collected in December 1993 a single core was sampled (stations MF-1, MF-2, E-2, SWB-5, SWB-6, SWB-8 and SWB-9) and individual core samples were processed to yield three laboratory replicate samples from each field sample. For all samples collected in July 1994, a single sediment core was obtained at each station and a single digestant was prepared per station.

Total lead concentrations for sediments from these sites are also summarized in Appendix Table 1 (data table from draft report for Phase II RCRA Facility Investigation, Harza, 1994). Total lead ranged from 13 - 38,000 mg/kg wet weight. These concentrations were utilized to prepare dilution protocols for subsequent sample processing and analysis of isotope ratios.

2.3 Sample processing

Sediment samples were stored at 5° C until sample processing. Sediments were extracted from individual cores, mixed homogeneously and a subsample removed to estimate percent water content individual sediment cores. The dry sediment aliquots were digested using a CEM Microwave Digestion system with the following protocol:

(1) one gram dry weight sample in 20 ml concentrated HNO_3: Milli-Q deionized water (1:1) (redistilled "low" metal acid);

(2) total of two hours digestion duration with mean power setting of 300 Watts (two consecutive microwave cycles with each cycle consisting of 8 minutes at 600 watts followed by 50 minutes at 300 watts).

Resulting digestants were quantitatively transferred to 50 ml final volume to achieve a

final HNO_3 concentration of 5%. Twelve samples were digested at one time including 10 environmental sediment samples, one processing blank sample, and one Standard Reference Material marine sediments (NRC PACS-1). Additional NIST standard reference materials were utilized to verify accuracy of isotope ratio recovery including common lead isotopic standard (SRM 981) and equal-atom lead isotopic standard (SRM 982) .

Including the combination of field triplicate samples and laboratory pseudo-replicate samples from the December 1993 collection period, a total of 27 analytical digestants were prepared (excluding QA/QC samples). A total of 18 single replicate digestants were prepared for samples from the July 1994 collection period.

2.4 Laboratory Analysis

Digestants of samples collected from the December 1993 period were analyzed by MEI, using a VG PlasmaQuad I ICP/MS. In addition to the standard ICP-MS configuration, the instrument was equipped with a water-cooled spray chamber and Galileo dianode detector to optimize sensitivity and stability and minimize background noise. Samples were calibrated using regression statistics based on the analysis of five aqueous standards including 0.1, 1.0, 10.0, 100.0 and 1000.0 ppb (ng/ml) lead. Methodology follows EPA standard method 6020 for ICP-MS applications. Internal standards of Thallium were used to verify consistency of the analytical process. Sample digestants, processing blanks, and SRM digestants (SRM isotopic lead 981, 982, SRM Freshwater 1643C, SRM sediment PACS1) were analyzed in May 12, 1994. Analyses also included samples to characterize relative percent difference (analytical duplicates), spike recovery (200 ng aqueous metal, post digestion) and method detection limits.

Due to high lead concentrations in the digestants, samples representing sediments from SWB7, SWB8, SWB9 and E-2 were diluted 1000x prior to analysis. Remaining samples were diluted 10x. Total lead measurements were provided by Harza (data table from draft report for Phase II RCRA Facility Investigation, Harza, 1994) and used as a basis for dilution protocols.

Raw integral data were collected for Pb 204, Pb 206, Pb 207 and Pb 208 using the peak-jump data acquisition mode with a total acquisition time of approximately 150 seconds.

Digestants of samples collected from the July 1994 period were analyzed by West Coast Analytical laboratories (Santa Fe Springs, CA) using a VG PlasmaQuad II$^+$ ICP/MS. Sample digestants, processing blanks, and SRM digestants (SRM 981, SRM sediment PACS1) were analyzed during the period October 7-October 10, 1994. Sample preparations were performed at MEI and resulting digestants were delivered to West Coast Analytical for analysis. Due to high lead concentrations in the digestants, samples representing sediments from SWB7, E-2 and E-4 were diluted in a range of 5,000-20,000x prior to analysis. Remaining samples were diluted in a range of 4-500x. Total lead measurements were provided by Harza and used as a basis for dilution protocols (data table from draft report for Phase II RCRA Facility Investigation, Harza, 1994). Raw integral data were collected for Pb 204, Pb 206, Pb 207 and Pb 208 using the peak-jump data acquisition mode with a total acquisition time of approximately 150 seconds. Resulting integral data were delivered to the MEI and all subsequent calculations were performed by MEI staff.

3 RESULTS

3.1 QA/QC

Various QA/QC parameters were assessed for sediments collected in December 1993 and analyzed by MEI. For standard reference materials that are certified for total Pb concentrations (SRM sediment and SRM freshwater), isotopic concentrations are compared to appropriate calibration standards and total Pb concentrations were calculated from the results of Pb206 and Pb207 analysis. This may be considered a *relative* estimate of Pb in concentration units (ng Pb/ ml water of mg Pb/kg sediment) and should not be confused with the *absolute* raw measurements of Pb206 and Pb207 (in units of detector counts/unit time of integration) that are used for the isotope ratio calculations. Based on the *relative* estimates of total Pb concentrations, percent recovery of lead in freshwater standard reference material (NIST 1643C) was 95.2% for Pb 206 and 94.2% for Pb 207. Using a similar convention, percent recovery of lead in marine sediment standard reference material (NRC PACS-1) was 82.1 $\pm$ 8.3% for Pb 206 and 85.2 + 7.6% for Pb 207. Relative percent difference for duplicate analysis of samples was 2.0% for Pb206 and Pb207 isotopes. Procedural Quantification Limits (PQL) were not directly measured for the analyses of this study but for other recently analyzed sediment samples performed by the same laboratory were determined to be 0.2 mg/kg dry weight.

For standard reference materials that are certified for atom percent of Pb204, Pb206, Pb207 and Pb208 (NIST 981 common lead isotope and NIST 982 equal atom lead isotope), the *absolute* raw measurements of Pb206 and Pb207 (in units of detector counts/unit time of integration) are compared to the certified atom percent values and the Pb206/Pb207 ratio is calculated based on these *absolute* measurements of counts per isotope. Mean percent recovery of the Pb206/Pb207 isotopic ratio was 93.4% for NIST SRM 981 and 90.8% for NIST SRM 982.

More limited QA/QC parameters were assessed for sediments collected in July 1994 and analyzed by West Coast Analytical. Percent recovery of total lead in marine sediment standard

reference material (NRC PACS-1) was 86.1% for Pb 206. Mean percent recovery of the Pb206/Pb207 isotopic ratio for NIST SRM 981 ranged from 94.6% to 98.4%.

3.2 Concentrations of Total Lead

The results for total lead concentrations in soils and sediments used for lead isotope analysis are presented in Table 1. The concentration of lead at Station E-2 in the marginal wetland was elevated with concentrations of 200 mg/kg at the 0'-1' depth in the July 1994 sampling. Concentrations at the 3' depth varied from 810 to 3,100 mg/kg for the December 1993 and July 1994 sampling periods respectively (Table 1).

For the primary off site source, the San Bruno Channel fill material, high concentrations of lead were observed in samples taken immediately above the marginal wetland. Station E-3 had concentrations of 22,000 and 19,000 mg/kg at the 1' and 3' depths and E-4 was marginally lower with concentrations of 13,000 and 15,000 mg/kg at those same depths respectively.

Data from the December 1993 and July 1994 sampling periods also confirmed elevated concentrations of lead in the subsurface soils from the Warehouse Area. Station SWB-7 had concentrations of lead ranging from 21,000 to 38,000 mg/kg at depths from 3 to 5 feet. Station SWB-8 was highly variable over the two sampling periods with a concentration 21,000 mg/kg reported for the 4' - 4.5' depth in the December 1993 sampling but below 20 mg/kg at all depths in the July 1994 sampling period. Concentrations of lead at Station SWB-9 in the Eastern Properties was also elevated at 28,000 mg/kg for the 4'-4.5' depth range. The concentrations of lead at the boundary of the property adjoining the marginal wetland was two orders of magnitude lower than the highest concentrations observed at the Warehouse Site (320 mg/kg at Station SWB-5).

The concentrations of lead at the mudflat (MF-1), marsh (MF-2) and upland reference (SWB-11) sites were in the 20 to 40 mg/kg range in the December 1993 sampling period.

Resampling of the mudflat sites in July 1994 resulted in somewhat higher concentrations of lead (e.g., 50 to 150 mg/kg).

3.3 Summary of Isotopic Ratios for Lead

Appendix Table 2 summarizes the uncorrected (raw) Pb206/Pb207 isotopic ratios for sediments collected in December 1993 and July 1994 Data from the December 1993 collection period are expressed as mean and standard deviation of three analyses for either field replicate samples or laboratory pseudo-replicate samples. Data from the July 1994 collection period are expressed as single sample measurements.

With the exception of sample SWB-8, the mean uncorrected Pb206/Pb207 isotope ratios ranged from 1.03 to 1.11 for samples collected in December 1993. The mean uncorrected Pb206/Pb207 isotope ratios ranged from and from 1.02 to 1.14 for samples collected in July 1994. The isotope ratios observed for SWB-8 sampled in December 1993 appear to be an analytical artifact. Three laboratory pseudo-replicates were processed from one sediment core and individual isotope ratios ranged from 0.77 to 1.16. The isotope ratio at SWB-8 during the July 1994 collection period was 1.14. Total lead measurements were also highly variable at this station. For samples collected at the 5' depth range, total lead was 21,000 mg/kg (ppm) in December 1993 and 16 mg/kg in July 1994. These isotope ratios are based on single core samples from each collection period. Current data do not allow us to determine if this high variability in isotope ratios and total lead measurements reflects micro-heterogeneity in lead concentrations and sources at SWB-8 or an analytical artifact. Therefore, further discussion of isotope ratios do not include measurements of SWB-8 from the December 1993 period.

Standard reference materials were used to evaluate performance of the ICP/MS instruments within and between sampling periods. Minor differences were observed between analytical periods for the percent recovery of the isotopic ratios measured in the common isotopic standard (NIST 981) and mean percent recoveries were 93.4% for December 1993 and 97.5% for

July 1994. The raw Pb206/Pb207 isotopic ratios were therefore normalized for percent recovery of the values measured in the common isotopic standard (NIST 981) for each respective time period and normalized isotope ratios are summarized in Appendix Table 3.

3.4 Isotope Ratios in Contaminated Sediments from the Marginal Wetland

Isotope ratios for lead in sediments from Station E-2 were consistently in the 1.15 range. Sediments from the upper foot of sampling had a slightly lower isotope ratio that those from 3 feet (Table 3; Figure 2). Isotopic ratios were generally consistent for samples collected at E-2 (3' depth) during both time periods.

3.5 Isotope Ratios in Soils from Potential Source Areas at the Fuller O'Brien Site

The primary focus in this study were on-Site and off-Site sources of sediments to transect station E-2. The on-Site sources of the Warehouse Area of Concern and the off-Site sources of transect station E-3 and E-4 are primarily considered as potential sources because of their proximity to the marginal wetland.

3.5.1 On-site Sources (Warehouse Area)

Mean normalized Pb206/Pb207 isotope ratios at Stations from the Warehouse SWMU showed substantial horizontal and vertical variability (Figure 2). Ratios ranged from 1.05 (SWB-7, 8' sampling depth) to 1.19 (SWB-8, 8' sampling depth). No consistent patterns were observed between isotope ratios and sample depth. At station SWB-7 from July 1994, lead isotope ratios decreased from 1.11 to 1.05 with increasing sampling depth (3' to 8'). At station SWB-8 from July 1994 (located east of the warehouse), lead isotope ratios increased from 1.09 to 1.19 with increasing sampling depth (3' to 8'). Temporal variability, however, was minimal at SWB-7 where

data was collected in both time periods .

3.5.2 Off-Site Sources (San Bruno Channel Fill Material)

Mean normalized Pb206/Pb207 isotope ratios generally ranged from 1.08 to 1.15 throughout the transect stations E-3 and E-4 (Figure 2). Stations E-3 and E-4 were only sampled during the July 1994 period. With increasing distance along the transect in a southern direction away from Site, ratios were progressively lower with a lowest value of 1.07 observed at E-4. This increasing distance along the transect in a southern direction away from the Fuller-O'Brien site corresponds with an increase in elevation of surface soil presumably from the landfill activities.

3.6 Isotope Ratios in Soils from Other Areas of Concern at the Fuller O'Brien Site

Isotope ratios of lead were determined for soils two additional Areas of Concern at the Site, including the Former Tank Farm SWMU/Eastern Property and the Former Solvent Still SWMU.

3.6.1 Eastern Property and Former Solvent Still Areas

The lead isotope ratio in soils from station SWB-6 located in the Former Solvent Still SWMU was 1.19 at the 5' to 5.5' (Table 3). For station SWB-9 in the Eastern Property Area of Concern the lead isotope ratio was 1.12 at the 4' to 4.5' depth (Table 3).

3.7 Isotope Ratios in Soils and Sediments from the Reference Stations

Reference stations were designated in an upland region (SWB-11) and a mudflat region (MF-1; Figure 1).

3.7.1 Upland Reference Station

The Warehouse Area of Concern reference station, SWB-11, was characterized by lower lead isotope ratios (1.13) based on a single sampling period in December 1993 (Figure 2).

3.7.2 Mudflat Reference Stations

Mean normalized Pb206/Pb207 isotope ratios generally ranged from 1.13 to 1.16 throughout the three stations of mudflat area MF-1 (Figure 3). Isotopic ratios were generally consistent for samples collected during both time periods at MF-1. No obvious relationships were observed between lead isotope ratios and depth of sampling.

3.7.3 Marginal Wetland Reference Stations

Mean normalized Pb206/Pb207 isotope ratios generally ranged from 1.12 to 1.19 throughout the four stations of mudflat area MF-2 (Figure 4). No comparison between sampling periods was possible. The lead isotope ratios for sediments at mudflat station MF-2-1 closest to the Former Solvent Still SWMU were distinctly elevated (ratio = 1.19) compared to the mudflat stations located in the channel (MF-2b) or closer to San Francisco Bay (MF-2e and MF-2f). These latter stations were characterized by lower lead isotope ratios (1.12-1.13) that agree with the range observed at the mudflat stations of the Eastern Property Area of Concern (MF-1) and the Warehouse Area of Concern reference station SWB-11 (Figure 5).

4 DISCUSSION

The present study reports Pb206/Pb207 isotopic ratios ranging from 1.05 to 1.19 representing a total isotopic ratio range of 0.13 in sediments collected at the study site. This range is somewhat lower than similar isotope measurements in other studies used to differentiate sources of mining ores (Hinners et al, 1987; Sturges and Barrie, 1987) and atmospheric emissions (Grousset et al., 1994). However, in these previous studies, differences in Pb isotope ratios as low as 0.08 were sufficient to demonstrate statistically significant differences in lead source materials.

4.1 Sources of Elevated Lead in the Central Region of the Marginal Wetland

As indicated in Section 2.1 the primary purpose of this study was to distinguish the sources of lead contamination in sediments from the middle section of the marginal wetland. Previous data indicated the fill materials located to the south of and immediately above this portion of the wetland had served as a primary source of elevated concentrations of lead in these sediments (Mark Group, 1989). Data from this study confirm that the surface layer of this fill material contains high concentrations of lead (e.g., 13,000 to 22,000 mg/kg). Indeed the highest concentrations measured in the fill area (22,000 mg/kg) were in the upper foot of fill at Station E-3 which is located just above the wetland (Figure 1). The concentrations of lead in these fill materials, the loose nature of the fill and its location immediately above the contaminated section of the wetland suggest that this fill is the primary source of lead for the wetland.

Evaluation of the lead isotope ratios for the stations in the San Bruno Channel fill area suggests a gradient pattern along the surface of the fill (Figure 2). The lowest lead isotope ratios occur at Station E-4 (Pb206/Pb207=1.07) in the more elevated region of the fill and increase through Station E-3 (1.10) in the lower region of the fill and E-2 (1.15) which is located in the channel of the marginal wetland (Figure 1). The origins of this apparent gradient are unclear but may reflect different sources of fill materials over time.

The Warehouse SWMU was also considered a potential source of lead for the marginal wetlands. The highest concentrations of lead in this SWMU are located in the deeper soils adjacent to the Warehouse (e.g., the 3' to 8' depths for Stations SWB-7 and SWB-8). These stations are located some distance from the marginal wetland (Figure 1) and the depth of this contamination suggest that it was deposited prior to the fill which was resulted in the creation of the marginal wetland. Concentrations of lead in soils from Station SWB-5 which is located at the boundary of the Site and adjacent to the contaminated portion of the marginal wetland are much lower than those by the Warehouse suggesting little migration of this contamination. Moreover, the concentrations of lead at Station SWB-5 (e.g., 320 mg/kg) are at the low end of the range seen in the marginal wetland and orders of magnitude lower than those for the E-3 and E-4 stations (e.g., 320 mg/kg vs 13,000 to 22,000 mg/kg). These data suggest that relative to fill material, the Warehouse SWMU represents an insignificant source of lead for the marginal wetland.

The lead isotope data for soils from the Warehouse SWMU are very heterogenous and show no patterns which can be related to the lead contamination in the tidal wetland (Figure 2). Ratios from Station SWB-7 are variable and substantially lower than those seen in the wetlands. Ratios for sediments from SWB-8 are even more variable with shallower soils having ratios comparable to those at Station SWB-7 and soils from greater depths having ratios in excess of 1.17. This variability may reflect differing sources of lead over the 100 + year history of the site. Station SWB-5 which is nearest the marginal wetland has an intermediate lead isotope ratio (1.12) which is consistent with that of Station SWB-11 (1.13) at a depth which showed no lead contamination (e.g., 43 mg/kg at a depth of 5 feet).

4.2 Lower Wetland/Mudflat-2

In the lower wetland, the slough opens up into a small ponded area behind a sand barrier which separates the Wetland from the San Francisco Bay. This section of the channel is subject to tidal flux from the Bay. Total lead concentrations were low, ranging from 50-110 mg/kg (ppm)

lead at mudflat stations MF-2, MF-2b, MF-2e and MF-2f and at wetland station SWB-6 located in the Former Solvent Still SWMU. The lead isotope ratios were high at 1.19 for MF-2-1 and SWB-6 agreeing with the range previously discussed range for background sediments in the Warehouse area. The mean normalized lead isotope ratios at MF-2b, MF-2e and MF-2f were lower, ranging from 1.12-1.13.

4.3 Eastern Wetland and Mudflat Habitat

Directly east of the Site is the San Francisco Bay; the boundary of the Site is protected by a revetment of concrete pieces and rocks. The Mudflat habitat drops off steeply from this revetment. The Eastern Property, which is part of the Former Tank Farm SWMU/Eastern Property Area of Concern, is just to the west of the Mudflat habitat. Total lead concentrations was 28,000 mg/kg (ppm) at SWB-9 located at the Eastern Property Area of Concern. The mean normalized lead isotope ratio was 1.12 at this site. At the adjacent mudflat stations of MF-1-1, MF-1d and MF-1f, total lead concentrations represented background levels ranging from 65-150 mg/kg (ppm). The low concentrations of lead in the MF-1 series of stations and the higher range of lead isotope ratios (e.g., 1.13 to 1.16) indicate that lead contamination in sediments SWB-9 have not contributed to significant lead contamination in the adjacent mudflats.

4.4 Conclusions

The primary purpose of this study was to evaluate potential sources of lead contamination in sediments from the middle section of the marginal wetland. Previous data implicated the off site fill materials located to the south of the wetland as a primary source of elevated concentrations of lead in wetland sediments (Mark Group, 1989). Data from this study confirm that the surface layer of this fill material contains high concentrations of lead. The concentrations of lead in these fill materials, the loose nature of the fill and its location immediately above the contaminated section of the wetland suggest that this fill is the primary source of lead for the

wetland.

In support of this, the lead isotope ratios for the stations in the San Bruno Channel fill area show a gradient pattern along the surface of the fill. The lowest lead isotope ratios are found in the more elevated region of the fill, and ratios increase through the lower region of the fill and into the sediments of the marginal wetland (Figure 1). This apparent gradient in lead isotopic ratios is consistent with the fill material above the marsh acting as a source of lead for the marginal wetland.

The Warehouse SWMU was also considered a potential source of lead for the marginal wetlands. However, the highest concentrations of lead in this SWMU are located in the deeper soils some distance from the marginal wetland. Moreover, the concentrations of lead in soils from Station SWB-5 which is located down gradient of this SWMU and immediately above the marginal wetland are orders of magnitude lower than those for the E-3 and E-4 stations (e.g., 320 mg/kg vs 13,000 to 22,000 mg/kg). These data suggest that relative to fill material, the Warehouse SWMU represents an insignificant source of lead for the marginal wetland. Moreover, the lead isotopic ratios for the site are highly variable both spatially and with depth indicating no clear pattern of lead deposition relative to the marginal wetland.

5 REFERENCES

Grousset, Francis E., C.R. Quetel, B. Thomas, P. Buat-Menard, O.F.X. Donard, A. Bucher, 1994. Transient Pb isotopic signatures in the western European atmosphere. *Environ Sci. Technol*, 28: 1605-1608.

Harza, 1994. *Draft report for Phase II RCRA Facility Investigation, Fuller-O'Brien Paint Facility.* April, 1994. Prepared by Dennis Laduzinsky and Stephen Henshaw.

Hinners, Thomas, E. Heithmar, T. Spittler and J. M. Henshaw, 1987. Inductively Coupled Plasma Mass Spectrometric Determination of Lead Isotopes. *Analytical Chemistry* 59: 2658-2662.

Mark Group, 1989. *San Bruno Channel Fill Investigation, South San Francisco, CA.* March 3, 1989. N.D. Marachi, principal, The Mark Group, Engineers & Geologists, Inc.

Ratech, 1993. *Data Needs Letter for a Risk Assessment/Ecological Evaluation.* May 28, 1993.

Sturges, W. T. and L. A. Barrie, 1987. Lead 206/207 Isotope Ratios in the atmosphere of North America as tracers of U.S. and Canadian emissions. *Nature* : 144-146.

U.S. EPA, 1983. *Methods for chemical analysis of water and wastes.* Environmental Monitoring and Support Laboratory, Cincinnati, OH. EPA 600/4-79-020, US EPA, March 1983.

U.S. EPA, 1990. *Guidelines and specifications for preparing Quality Assurance Project Plans.* Chapter 1. Quality Control. Revision 1, November, 1990. Office of Monitoring Systems and Quality Assurance, ORD, US EPA, Washington, DC 20460.

U.S. EPA, 1986. *Test methods for Evaluating Solid Waste. Volume IA: Laboratory Manual Physical/Chemical Methods.* SW-846, November 1986, third edition. Office of Solid Waste and Emergency Response, Washington DC 20460.

U.S. EPA, 1979. *Handbook for Analytical Quality Control in Water and Wastewater Laboratories.* Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA-600/4-79-01S. March 1979.

Appendix Table 1: Summary of samples received for analyses of Pb isotopes
Prepared: S.R. Howe; Jenkins, Sanders & Associates
Date: January 31, 1995

Station	Depth (ft)	Date of Collection	Date Received	# cores	# replicates analysed per core	Total # analyses	Total Pb (ppm) (Harza, 94)*
MF-1	1'	01/17/94	01/19/94	1	3	3	42
MF-2	1'	01/17/94	01/19/94	1	3	3	22
E-2 ***	3'	12/10/93	01/05/94	1	3	3	810
SWB-5	5 - 5.5'	01/04/94	01/13/94	1	3	3	320
SWB-6	5.5 - 6'	01/17/94	01/19/94	1	3	3	61
SWB-7	5 - 5.5'	12/09/93	01/05/94	3	1	3	32000
SWB-7	5 - 5.5'	01/09/94	01/06/94	3	1	0 **	
SWB-8	5 - 5.5'	01/04/94	01/06/94	1	3	3	21000
SWB-9	4 - 4.5'	01/04/94	01/06/94	1	3	3	28000
SWB-11	5 - 5.5'	12/09/93	01/05/94	3	1	3	43
Analyses Total (December 93/January 94):						27	
SWB-7	3'	07/26/94	08/10/94	1	1	1	30000
SWB-7	5'	07/26/94	08/10/94	1	1	1	38000
SWB-7	8'	07/26/94	08/10/94	1	1	1	1800
SWB-8	3'	07/26/94	08/10/94	1	1	1	18
SWB-8	5'	07/26/94	08/10/94	1	1	1	16
SWB-8	8'	07/26/94	08/10/94	1	1	1	13
E-2	1'	07/29/94	08/16/94	1	1	1	200
E-2	3'	07/29/94	08/16/94	1	1	1	3100
E-3	1'	07/29/94	08/16/94	1	1	1	22000
E-3	3'	07/29/94	08/16/94	1	1	1	19000
E-4	1'	07/29/94	08/16/94	1	1	1	13000
E-4	3'	07/29/94	08/16/94	1	1	1	15000
MF-1d	1'	07/29/94	08/25/94	1	1	1	65
MF-1	1'	07/29/94	08/25/94	1	1	1	130
MF-1f	1'	07/29/94	08/25/94	1	1	1	150
MF-2b	1'	07/29/94	08/25/94	1	1	1	50
MF-2f	1'	07/29/94	08/25/94	1	1	1	50
MF-2e	1'	07/29/94	08/25/94	1	1	1	110
Analyses Total (July 94):						18	

* Draft report for Phase II RCRA Facility Investigation, Fuller-O'Brien Paint Facility. April, 1994. Prepared by Dennis Laduzinsky and Stephen Henshaw.

** sample returned to Fuller-O'Brien on 1/13/94

*** chain of custody originally labelled as X-3

Appendix Table 2. Summary of Lead Isotope Ratios for Sediments from the Fuller-O'Brien Site (ratios based on raw integral counts from ICP-MS analysis)

Prepared: S.R. Howe; Jenkins, Sanders & Associates

Date: January 31, 1995

STATION	NUMBER of REPLICATES	DEPTH		Dec '93 Sampling		July '94 Sampling	
				Pb206/Pb207	%Recovery 1	Pb206/Pb207	%Recovery 1
SWB-5-1	3	5 - 5.5'	MEAN	1.043	93.39%		
			STD	0.005			
SWB-6-1	3	5.5 - 6'	MEAN	1.109	93.39%		
			STD	0.001			
SWB-7-1	3	5 - 5.5'	MEAN	1.030	93.39%	1.0701	99.18% 2
			STD	0.002			
SWB-7-3	1	3'				1.0754	97.32%
SWB-7-3	1	8'				1.0252	97.32%
SWB-8-1	3	5 - 5.5'	MEAN	0.914	93.39%	1.1411	97.32% 2
			STD	0.173			
SWB-8-4	1	3'				1.0564	97.32%
SWB-8-5	1	8'				1.1542	97.32%
SWB-9-1	3	4 - 4.5'	MEAN	1.048	93.39%		
			STD	0.008			
SWB-11-1	3	5 - 5.5'	MEAN	1.051	93.39%		
			STD	0.018			
E-2	1	1'				1.0859	94.62%
E-2	1	3'		1.075	93.39%	1.0920	94.62%
E-3	1	1'				1.0423	94.62%
E-3	1	3'				1.0375	94.62%
E-4	1	1'				1.0175	94.62%
E-4	1	3'				1.0177	94.62%
MF-1	3	1'	MEAN	1.083	93.39%	1.1217	98.13% 2
			STD	0.017			
MF-1D	1	1'				1.1114	98.13%
MF-1F	1	1'				1.1142	98.13%
MF-2-1	3	1'	MEAN	1.113	93.39%		
			STD	0.020	93.39%		
MF-2B	1	1'				1.0978	98.41%
MF-2E	1	1'				1.1101	98.41%
MF-2F	1	1'				1.1111	98.41%

1 Based on analysis of NIST 981 common lead isotope certified Pb206 / Pb207 ratio of 1.09332

2 one replicate analysed

Appendix Table 3. Summary of Lead Isotope Ratios for Sediments from the Fuller-O'Brien Site (ratios based on integral counts from ICP-MS analysis normalised to SRM % Recovery)

Prepared: S.R. Howe; Jenkins, Sanders & Associates

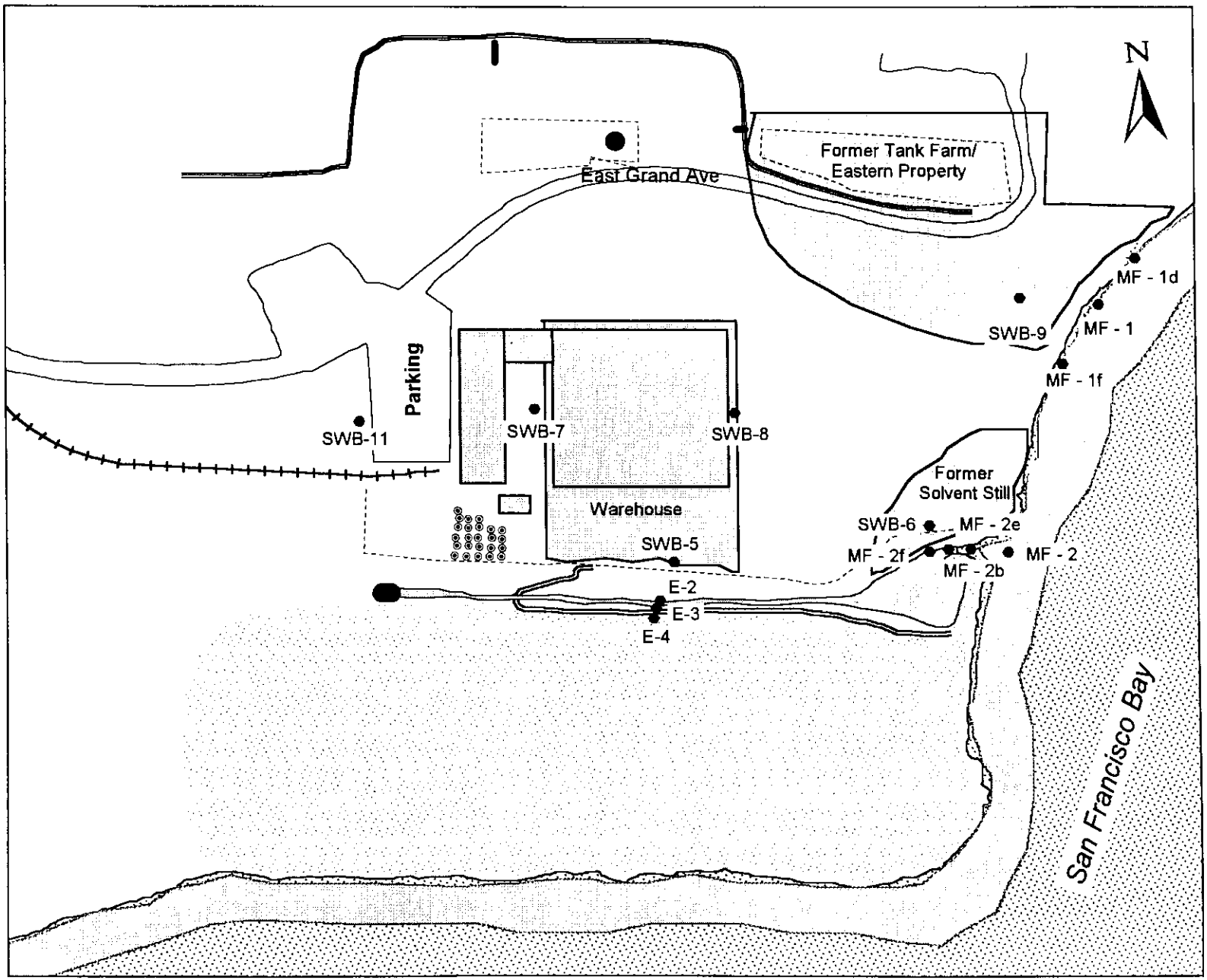
Date: January 31, 1995

STATION	NUMBER of REPLICATES	DEPTH		Dec '93 Sampling Pb206/Pb207	%Recovery 1	July '94 Sampling Pb206/Pb207	%Recovery 1
SWB-5-1	3	5 - 5.5'	MEAN	1.117	93.39%		
			STD	0.005			
SWB-6-1	3	5.5 - 6'	MEAN	1.188	93.39%		
			STD	0.001			
SWB-7-1	3	5 - 5.5'	MEAN	1.103	93.39%	1.0789	99.18% 2
			STD	0.002			
SWB-7-3	1	3'				1.1050	97.32%
SWB-7-3	1	8'				1.0535	97.32%
SWB-8-1	3	5 - 5.5'	MEAN	0.979	93.39%	1.1726	97.32% 2
			STD	0.173			
SWB-8-4	1	3'				1.0855	97.32%
SWB-8-5	1	8'				1.1860	97.32%
SWB-9-1	3	4 - 4.5'	MEAN	1.122	93.39%		
			STD	0.008			
SWB-11-1	3	5 - 5.5'	MEAN	1.126	93.39%		
			STD	0.018			
E-2	1	1'				1.1476	94.62%
E-2	1	3'		1.151	93.39%	1.1540	94.62%
E-3	1	1'				1.1016	94.62%
E-3	1	3'				1.0965	94.62%
E-4	1	1'				1.0754	94.62%
E-4	1	3'				1.0756	94.62%
MF-1-1	3	1'	MEAN	1.159	93.39%	1.1431	98.13% 2
			STD	0.017			
MF-1D	1	1'				1.1326	98.13%
MF-1F	1	1'				1.1354	98.13%
MF-2-1	3	1'	MEAN	1.191	93.39%		
			STD	0.020	93.39%		
MF-2B	1	1'				1.1155	98.41%
MF-2E	1	1'				1.1281	98.41%
MF-2F	1	1'				1.1291	98.41%

1 Based on analysis of NIST 981 common lead isotope certified Pb206 / Pb207 ratio of 1.09332

2 one replicate analysed

Fuller-O'Brien Lead Isotope Study



Legend

- Areas of concern
- Fill Area
- Buildings
- Ridge
- 15 ft isocline
- Slough
- Mudflat
- Drainage Pipe
- Storm Pipe
- Stations for isotope study

Scale

0 Feet 400

FOB
Lead Isotope Study
JSA **Fig. 1**

Figure 2. Pb Isotope Ratios in Fuller-O'Brien Sediments collected in the Warehouse Area of Concern

(Isotope ratios normalised to recovery of NIST 981 SRM)

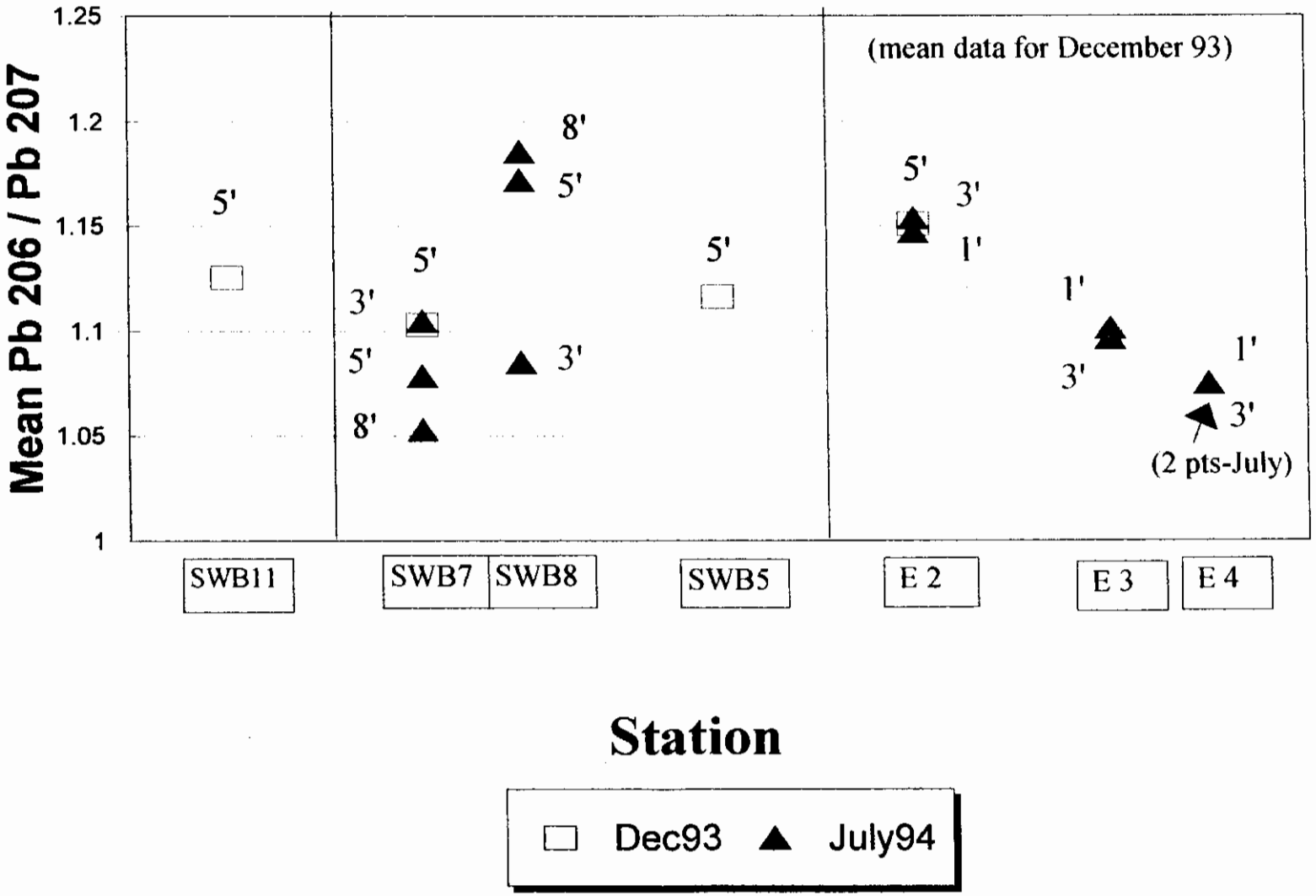


Figure 3. Pb Isotope Ratios in Fuller-O'Brien Sediments collected in the Eastern Property Area of Concern

(Isotope ratios normalised to recovery of NIST 981 SRM)

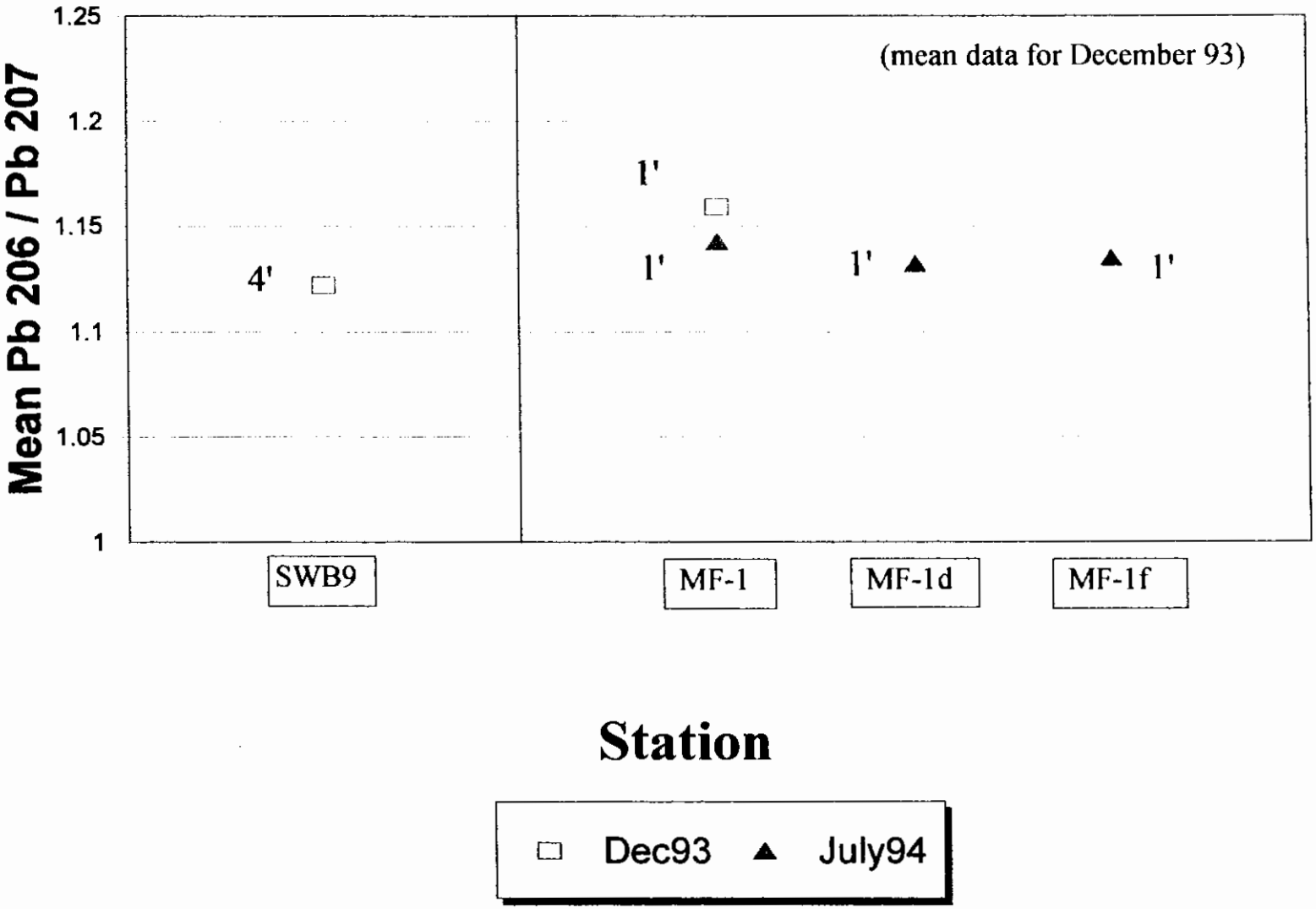


Figure 4. Pb Isotope ratios in Fuller-O'Brien Sediments collected in the Former Solvent Still SWMU

(Isotope ratios normalised to recovery of NIST 981 SRM)

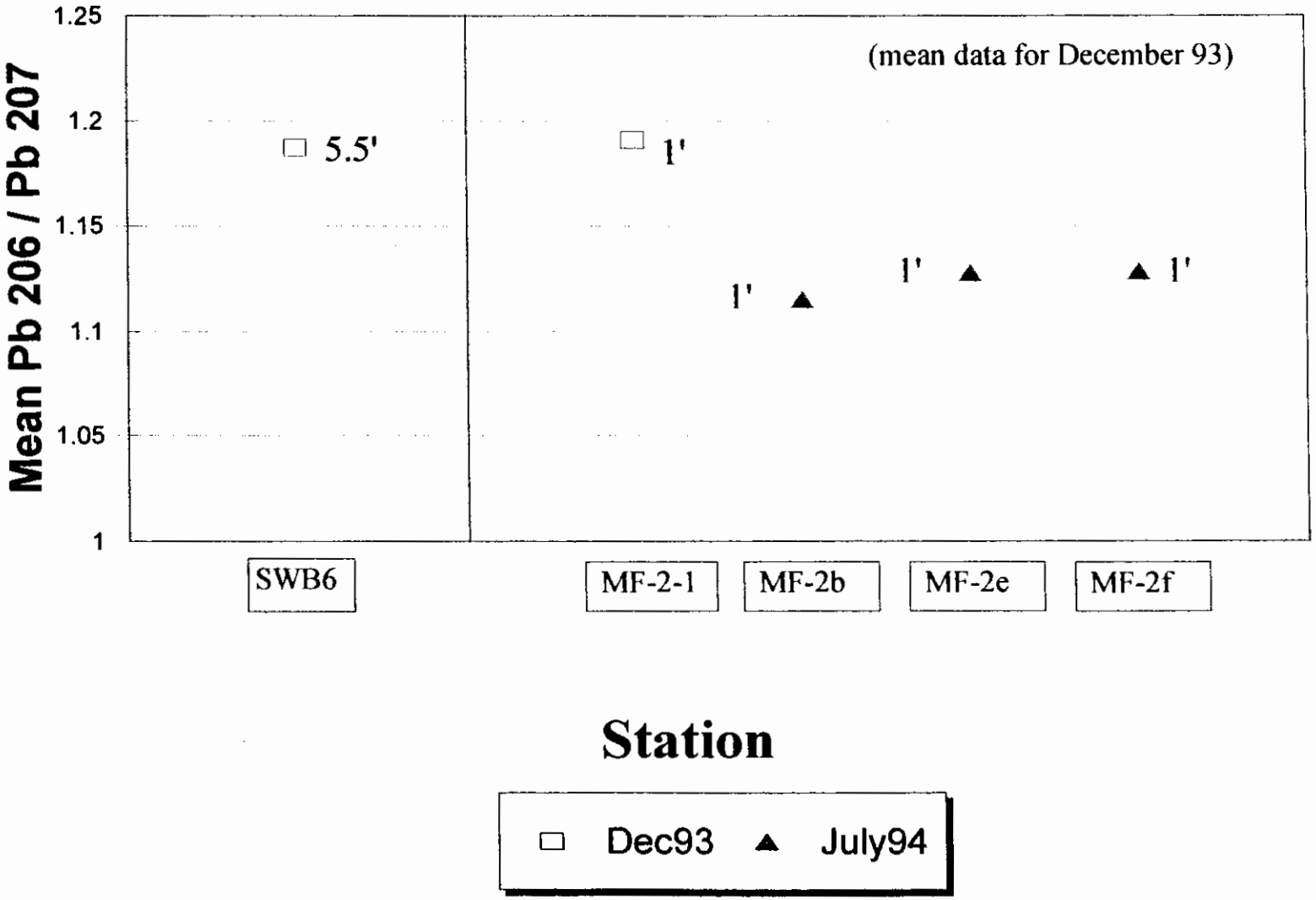
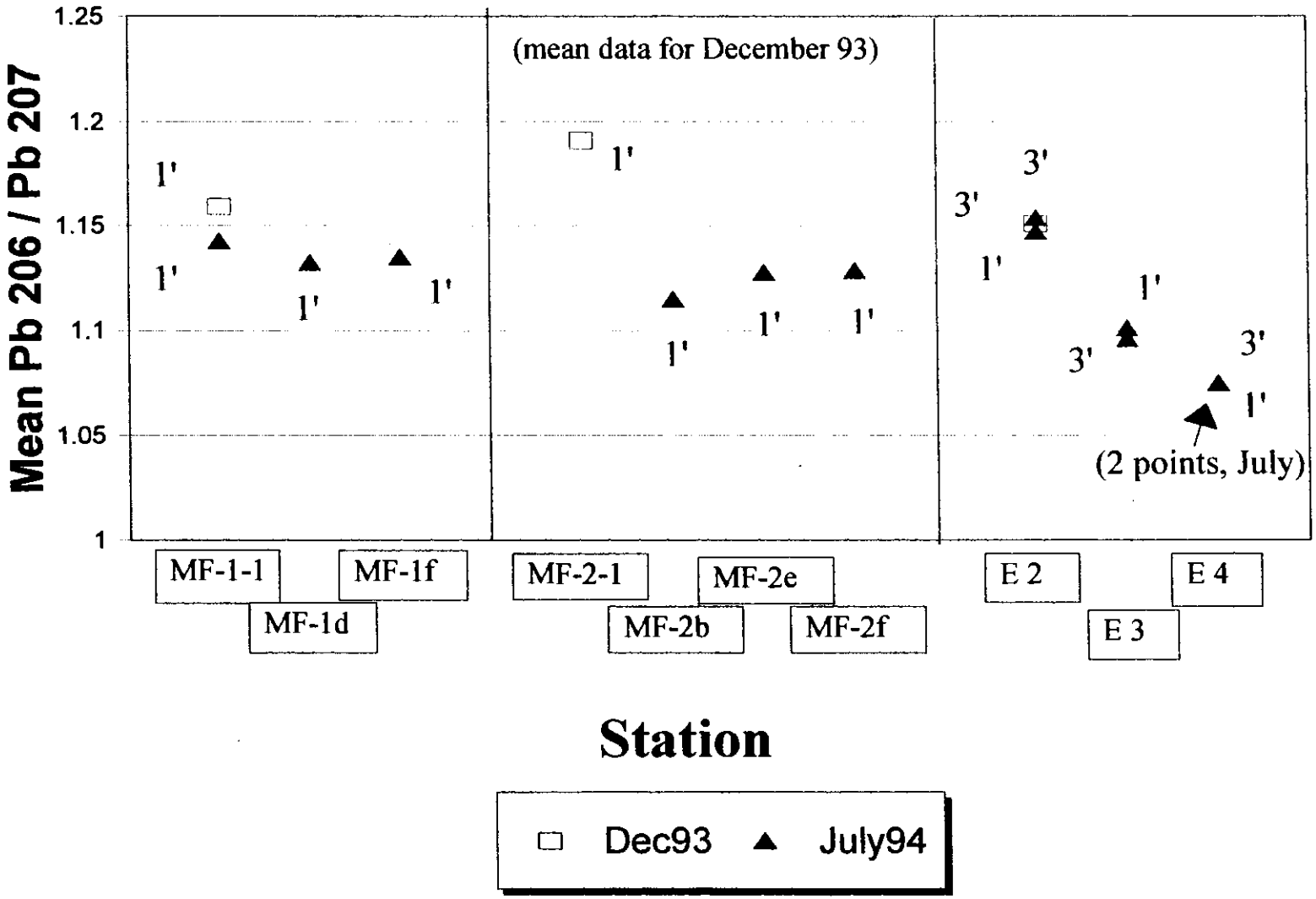


Figure 5. Pb Isotope Ratios in Fuller-O'Brien Sediments collected in mudflat and wetland areas

(Isotope ratios normalised to recovery of NIST 981 SRM)



Soil Quality Report for Additional Soil Characterization Activities

Fuller-O'Brien Paints
South San Francisco, California

February 2, 1995

Prepared For:

Fuller-O'Brien Paints
395 Oyster Point Boulevard, Suite 350
South San Francisco, CA 94080

Prepared By:

Harza Consulting Engineers and Scientists
425 Roland Way
Oakland, CA 94621

February 2, 1995

Ms. Patricia Houle
Fuller-O'Brien Paints
395 Oyster Point Blvd., Suite 350
South San Francisco, CA 94080

Re: Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints, 450 East Grand Avenue, South San Francisco, California
Project No: K615-L

Dear Ms. Houle:

Harza is pleased to submit this report for the above referenced project. This report supports a lead isotope study and soil quality characterization at the Fuller-O'Brien Paints, South San Francisco facility.

Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Harza Consulting Engineers and Scientists

Stephen R. Henshaw
Vice President, Environmental Services

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Soil Quality Report for Additional Soil Characterization Activities Fuller-O'Brien Paints South San Francisco, California

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Stephen R. Henshaw
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HARZA

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DISTRIBUTION

Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints
South San Francisco, California

1.0 INTRODUCTION

This report presents soil quality results of additional soil characterization activities conducted at the Fuller-O'Brien Paints manufacturing facility, in South San Francisco, California (Figure 1). Data presented in this report will be utilized as part of the RCRA Facility Investigation (RFI) and for a lead isotope study being conducted by Jenkins, Sanders and Associates.

The activities, performed at the request of Fuller-O'Brien Paints, were conducted in accordance with applicable federal, state, and local laws. Existing documents and plans, including Harza's December 28, 1993 document entitled: *Phase II RCRA Facility Investigation Workplan*, The O'Brien Corporation, 450 East Grand Avenue, South San Francisco, California were used during these activities.

1.1 Project Purpose

The purpose of this project was to collect soil quality data for incorporation into the existing RFI database and to evaluate sources of lead and their isotopic ratios at the site and in adjacent areas. The RFI activities included evaluating the presence of semi-volatile organic compounds (SVOCs) and the concentration of total organic carbon (TOC) in the marginal wetlands and tidal mud flats. The source evaluation included defining lead isotope ratios in three distinct areas: the warehouse area, the marginal wetlands, and the tidal mud flats.

This document was prepared for the sole use of The O'Brien Corporation (O'Brien) and Fuller-O'Brien Paints. No other party should rely on the information contained herein without Harza's prior written consent.

1.2 Site Location and Background

The Fuller-O'Brien Paints manufacturing facility is located at 450 East Grand Avenue in South San Francisco, California (Figure 1). The facility is located on the Point San Bruno adjacent to the San Francisco Bay and the former San Bruno Channel (presently filled and acting as a marginal wetland).

The O'Brien site is approximately 28 acres and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by Genentech and San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations on-site range from 5 to 20 feet mean sea level (MSL).

The site has been operated as a paint manufacturing facility for over 100 years. O'Brien started operating the facility in 1967 and purchased the property in 1970.

2.0 METHODS OF INVESTIGATION

The scope of work conducted during this field investigation included:

Warehouse Area

- Drilling and collecting soil samples from two borings (SWB-7 and SWB-8). Analyzing soil samples at 3, 5, and 8 feet below ground surface (bgs) for total lead.

Marginal Wetlands

- Obtaining sediment samples from three marginal wetland locations along the E-E' transect (E-2, E-3, and E-4) and from three locations adjacent to the F-F' transect (MF-2b, MF-2e, and MF-2f). All samples were analyzed for total lead. The MF samples were also analyzed for TOC and SVOCs.

- Surveying the approximate location of marginal wetlands sample collection points along a transect referenced to MSL.

Tidal Mud Flats

- Obtaining sediment samples from three tidal mud flat locations (MF-1d, MF-1, and MF-1f) at the 1-foot depth interval. Samples were analyzed for total lead, TOC, and SVOCs.

A summary of the soil and sediment sample collection and testing program is presented on Table 1. This table includes data collected during the December 1993 and January 1994 field activities.

2.1 Warehouse Soil Borings

On July 26, 1994, Harza drilled two borings and collected soil samples to characterize the soil quality on the eastern and western sides of the warehouse located on the Fuller-O'Brien Paints facility. These borings, identified as SWB-7 and SWB-8 (Figure 2), were drilled to depths of approximately 9.5 feet bgs. Three soil samples were collected for chemical analysis from each boring at depths of 3, 5, and 8 feet bgs.

The borings were drilled using a CME-75 drill rig equipped with 8-inch O.D. hollow stem augers. Boring logs are presented in Appendix A. Soil samples were collected in 2-inch diameter, 6-inch long brass liners. The tubes were then sealed on both ends with Teflon sheets and plastic end caps, labeled, and stored in iced shipping containers for delivery under chain-of-custody to American Environmental Network (AEN), a California Environmental Protection Agency certified laboratory. All samples were analyzed for total lead using EPA Method Series 6000/7000.

2.2 Marginal Wetlands Sediment Samples

On July 29, 1994, sediment samples E-2, E-3, and E-4 were collected at depths of 1 and 3 feet bgs. In addition, samples were collected from stations MF-2b, MF-2e and MF-2f at 1 foot bgs. The samples were collected during low tide, using stainless steel sampling tubes. Sample locations are presented on Figure 2.

Samples E-2, E-3, and E-4 were analyzed for total lead. Samples MF-2b, MF-2e, and MF-2f were analyzed for total lead, TOC (EPA Method 415.1), and SVOCs (EPA Method 8270). Note that characterization of volatile organic compounds (VOCs) was not warranted in these sampling locations. TOC analysis was conducted to determine the organic content of the sediment should retardation values need to be calculated in the future in an effort to evaluate the fate and transport of specific chemical constituents.

2.3 Tidal Mud Flat Sediment Samples

On July 29, 1994, sediment samples MF-1, MF-1d, MF-1f were collected from the tidal mud flats (Figure 2). The samples were collected during low tide, at 1 foot bgs, using stainless steel sampling tubes. Sediment samples were analyzed for total lead, SVOCs, and TOC.

3.0 CHEMICAL CHARACTERIZATION AND DISTRIBUTION

Soil quality data collected from the soil borings and sediment samples from the marginal wetlands and tidal mud flats are summarized on Tables 2 through 4 and presented on Figures 3 through 5. Laboratory analytical results are presented in Appendix B.
In addition, analytical results from previous RFI activities are included on Tables 2 and 4, Figures 4 and 5, and in Appendix C.

3.1 Warehouse Soil Borings

Elevated concentrations of total lead were detected in all of the samples collected from boring SWB-7, located west and adjacent to the warehouse. Maximum lead concentrations were reported at 38,000 milligrams per kilogram (mg/kg) or parts per million (ppm). Total lead was not detected at elevated levels in samples collected from boring SWB-8, during the July 1994 field activities. However, soil samples collected from this boring in December 1993 from the 0.5-1 foot and 5-5.5 foot intervals indicate lead levels of 840 and 21,000 ppm, respectively.

3.2 Marginal Wetlands Sediment Samples

Total lead was detected at elevated levels in all sediment samples collected from sample stations E-2, E-3, and E-4. These data indicate that a source of lead contamination appears to be coming from the fill material from the landfill located south of the marginal wetlands. This is supported by the fact that lead levels in samples collected from these stations increase toward the landfill material and by the fact that stations E-3 and E-4 are located at an elevation that is higher than the wetlands or the Fuller-O'Brien property boundary. A cross-sectional profile of the E-E' transect is presented on Figure 3. Lead ranged from 200 ppm in the 1 foot sample collected from E-2, to 22,000 ppm in the 1 foot sample collected from E-3. Lead levels in soil from boring SWB-5, located on the O'Brien property, range from 7 to 320 ppm.

Low lead concentrations, ranging from 22 ppm to 110 ppm, were detected in samples collected from the MF-2 stations. Lead levels in soil from boring SWB-6, located on the O'Brien property contain lead levels of 61 and 1,200 ppm. In addition, TOC concentrations in this area ranged from 1,700 ppm to 6,000 ppm. Low levels of SVOCs were detected in several marginal wetland samples.

3.3 Tidal Mud Flat Sediment Samples

Low levels of lead were detected in the MF-1 samples. These lead concentrations ranged from 42 ppm to 150 ppm. Lead levels in soil from boring SWB-9, located on the O'Brien property, range from 19,000 to 28,000 ppm. TOC concentrations in this area were reported between 3,500 ppm and 5,300 ppm. Low levels of SVOCs were detected in several samples collected from this area.

TABLES

Table 1
SOIL AND SEDIMENT SAMPLE COLLECTION AND TESTING PROGRAM
Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints, South San Francisco, California

Location	Sample ID	Sample Date	Sample Depth (feet)	Test Method		
				Total Lead	SVOCs	TOC
Warehouse Area	SWB-7	12/07/93	1-1.5	X	X	
			5-5.5	X	X	
			10-10.5	X	X	
			15-15.5	X	X	
		07/26/94	3	X		
			5	X		
			8	X		
	SWB-8	12/08/93	0.5-1	X	X	
			5-5.5	X	X	
			10-10.5	X	X	
			15-15.5	X	X	
		07/26/94	3	X		
			5	X		
			8	X		
Marginal Wetlands	SWB-5	12/09/93	0.5-1	X	X	
			5-5.5	X	X	
			10-10.5	X	X	
	SWB-6	12/07/93	0.5-1	X	X	
			5.5-6	X	X	
	E-2	01/04/94	3	X	X	
		07/29/94	1	X		
			3	X		
	E-3	07/29/94	1	X		
			3	X		
	E-4	07/29/94	1	X		
			3	X		
	MF-2	01/14/94	0.5-1	X		
	MF-2a	04/05/94	0.5	X	X	
	MF-2b	04/05/94	0.5	X	X	
		07/29/94	1	X	X	X
	MF-2c	04/05/94	0.5	X	X	
	MF-2e	07/29/94	1	X	X	X
	MF-2f	07/29/94	1	X	X	X
Tidal Mud Flats	SWB-9	12/07/93	3-3.5	X	X	
			4-4.5	X	X	
	MF-1	01/14/94	0.5-1	X		
		07/29/94	1	X	X	X
	MF-1a	04/05/94	0.5	X	X	
	MF-1b	04/05/94	0.5	X	X	
	MF-1c	04/05/94	0.5	X	X	
	MF-1d	07/29/94	1	X	X	X
	MF-1f	07/29/94	1	X	X	X

NOTES

SVOCs:	Semivolatile organic compounds (EPA Method 8270)
TOC:	Total organic carbon (EPA Method 415.1)
Total Lead:	(EPA Method Series 6000/7000)

Table 2
ANALYTICAL RESULTS OF TOTAL LEAD
FOR SOIL AND SEDIMENT SAMPLES
Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints, South San Francisco, California

Location	Sample ID	Sample Date	Sample Depth (feet)	Total Lead
Warehouse Area	SWB-7	12/09/93	1-1.5	270.
			5-5.5	32,000.
			10-10.5	1,100.
			15-15.5	110.
		07/26/94	3	30,000.
			5	38,000.
			8	1,800.
	SWB-8	12/08/93	0.5-1	840.
			5-5.5	21,000.
			10-10.5	32.
			15-15.5	160.
		07/26/94	3	13.
			5	16.
			8	13.
Marginal Wetlands	SWB-5	12/09/93	0.5-1	14.
			5-5.5	320.
			10-10.5	7.
	SWB-6	12/7/93	0.5-1	1,200.
			5.5-6	61.
	E-2	01/04/94	3	810.
		07/29/94	1	200.
			3	3,100.
	E-3	07/29/94	1	22,000.
			3	19,000.
	E-4	07/29/94	1	13,000.
			3	15,000.
	MF-2	01/14/94	0.5-1	22.
	MF-2a	04/05/94	0.5	33.
	MF-2b	04/05/94	0.5	40.
		07/29/94	1	50.
	MF-2c	04/05/94	0.5	18.
	MF-2e	07/29/94	1	110.
	MF-2f	07/29/94	1	50.
Tidal Mud Flats	SWB-9	12/07/93	3-3.5	19,000.
			4-4.5	28,000.
	MF-1	01/14/94	0.5-1	42.
		07/29/94	1	130.
	MF-1a	04/05/94	0.5	79.
	MF-1b	04/05/94	0.5	75.
	MF-1c	04/05/94	0.5	76.
	MF-1d	07/29/94	1	65.
	MF-1f	07/29/94	1	150.

NOTES
Concentrations in milligrams per kilogram or parts per million (ppm)
EPA Series 6000/7000

Table 3

ANALYTICAL RESULTS OF TOTAL ORGANIC CARBON FOR SOIL AND SEDIMENT SAMPLES

Soil Quality Report for Additional Soil Characterization Activities

Fuller-O'Brien Paints, South San Francisco, California

Location	Sample ID	Sample Date	Sample Depth (feet)	TOC
Tidal Mud Flats	MF-1	07/29/94	1	5,300.
	MF-1d	07/29/94	1	3,500.
	MF-1f	07/29/94	1	3,700.
Marginal Wetlands	MF-2b	07/29/94	1	1,700.
	MF-2e	07/29/94	1	6,000.
	MF-2f	07/29/94	1	2,600.

Table 4

ANALYTICAL RESULTS OF SEMIVOLATILE ORGANIC COMPOUNDS FOR SOIL AND SEDIMENT SAMPLES

Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints, South San Francisco, California

	Marginal Wetlands					
	MF-2a	MF-2b		MF-2c	MF-2e	MF-2f
Analyte	0.5' 04/05/94	0.5' 04/05/94	1' 7/29/94	0.5' 04/05/94	1' 7/29/94	1' 7/29/94
Acenaphthene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Acenaphthylene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Anthracene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzidine	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
Benzoic Acid	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
Benzo(a)anthracene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzo(b)fluoranthene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzo(k)fluoranthene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzo(g,h,i)perylene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzo(a)pyrene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Benzyl Alcohol	< 660	< 660	< 2,600	< 660	< 2,600	< 2,600
Bis(2-chloroxy)methane	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Bis(2-chloroethyl)ether	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Bis(2-chloroisopropyl)ether	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Bis(2-ethylhexyl)phthalate	< 330	< 330	< 1,300	< 330	**5,800**	< 1,300
4-Bromophenyl phenyl ether	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Butylbenzyl phthalate	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4-Chloroaniline	< 660	< 660	< 2,600	< 660	< 2,600	< 2,600
2-Chloronaphthalene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4-Chlorophenyl phenyl ether	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Chrysene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Dibenzo(a,h)anthracene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Dibenzofuran	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Di-n-butylphthalate	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
1,2-Dichlorobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
1,3-Dichlorobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
1,4-Dichlorobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
3,3'-Dichlorobenzidine	< 660	< 660	< 2,600	< 660	< 2,600	< 2,600
Diethylphthalate	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Dimethylphthalate	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,4-Dinitrotoluene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,6-Dinitrotoluene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Di-n-octylphthalate	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
1,2-Diphenylhydrazine	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Fluoranthene	< 330	**770**	< 1,300	< 330	< 1,300	< 1,300
Fluorene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Hexachlorobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Hexachlorobutadiene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Hexachlorocyclopentadiene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Hexachloroethane	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Indeno(1,2,3-cd)pyrene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Isophorone	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2-Methylnaphthalene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Naphthalene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300

Table 4
ANALYTICAL RESULTS OF SEMIVOLATILE ORGANIC COMPOUNDS FOR SOIL AND SEDIMENT SAMPLES
Soil Quality Report for Additional Soil Characterization Activities
Fuller-O'Brien Paints, South San Francisco, California

	Marginal Wetlands					
	MF-2a	MF-2b		MF-2c	MF-2e	MF-2f
Analyte	0.5' 04/05/94	0.5' 04/05/94	1' 7/29/94	0.5' 04/05/94	1' 7/29/94	1' 7/29/94
2-Nitroaniline	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
3-Nitroaniline	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
4-Nitroaniline	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
Nitrobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
N-Nitrosodimethylamine	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
N-Nitrosodiphenylamine	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
N-Nitrosodi-n-propylamine	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
Phenanthrene	< 330	530	< 1,300	< 330	< 1,300	< 1,300
Pyrene	< 330	720	< 1,300	< 330	< 1,300	1,300
1,2,4-Trichlorobenzene	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4-Chloro-3-methylphenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2-Chlorophenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,4-Dichlorophenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,4-Dimethylphenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4,6-Dinitro-2-methylphenol	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
2,4-Dinitrophenol	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
2-Methylphenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4-Methylphenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2-Nitrophenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
4-Nitrophenol	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
Pentachlorophenol	< 1,600	< 1,600	< 6,400	< 1,600	< 6,400	< 6,400
Phenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,4,5-Trichlorophenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300
2,4,6-Trichlorophenol	< 330	< 330	< 1,300	< 330	< 1,300	< 1,300

Table 4
ANALYTICAL RESULTS OF SEMIVOLATILE ORGANIC COMPOUNDS FOR SOIL AND SEDIMENT SAMPLES
Soil Quality Report for Additional Soil Characterization Activities

	Tidal Mud Flats					
	MF-1	MF-1a	MF-1b	MF-1c	MF-1d	MF-1f
Analyte	1' 7/29/94	0.5' 04/05/94	0.5' 04/05/94	0.5' 04/05/94	1' 7/29/94	1' 7/29/94
2-Nitroaniline	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
3-Nitroaniline	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
4-Nitroaniline	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
Nitrobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
N-Nitrosodimethylamine	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
N-Nitrosodiphenylamine	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
N-Nitrosodi-n-propylamine	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Phenanthrene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Pyrene	< 1,300	600	< 330	430	< 1,300	< 1,300
1,2,4-Trichlorobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4-Chloro-3-methylphenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2-Chlorophenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,4-Dichlorophenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,4-Dimethylphenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4,6-Dinitro-2-methylphenol	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
2,4-Dinitrophenol	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
2-Methylphenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4-Methylphenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2-Nitrophenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4-Nitrophenol	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
Pentachlorophenol	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
Phenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,4,5-Trichlorophenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,4,6-Trichlorophenol	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300

NOTES
All results reported in micrograms per kilogram or parts per billion (ppb).
Analytical Method EPA 8270.

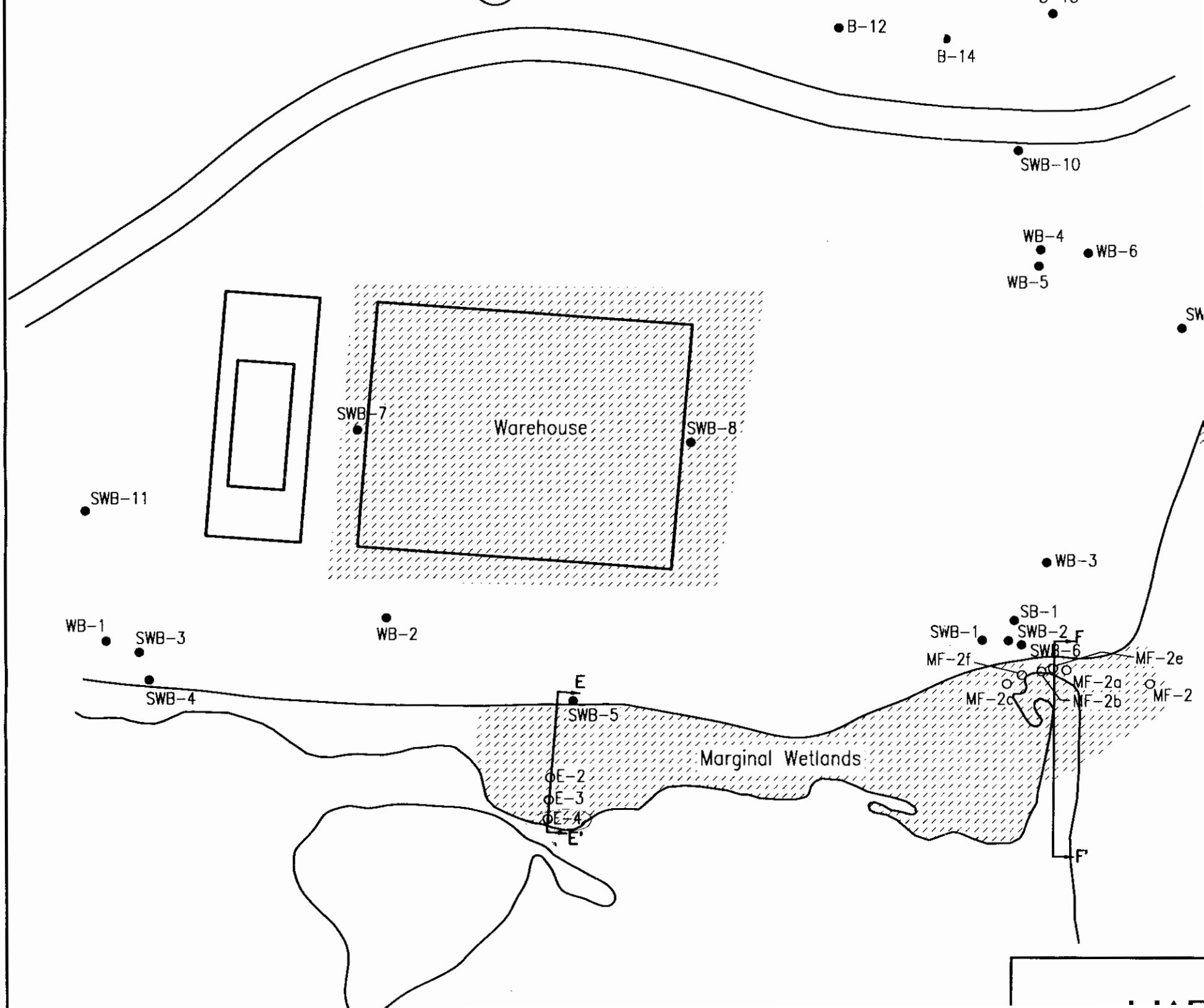
Table 4

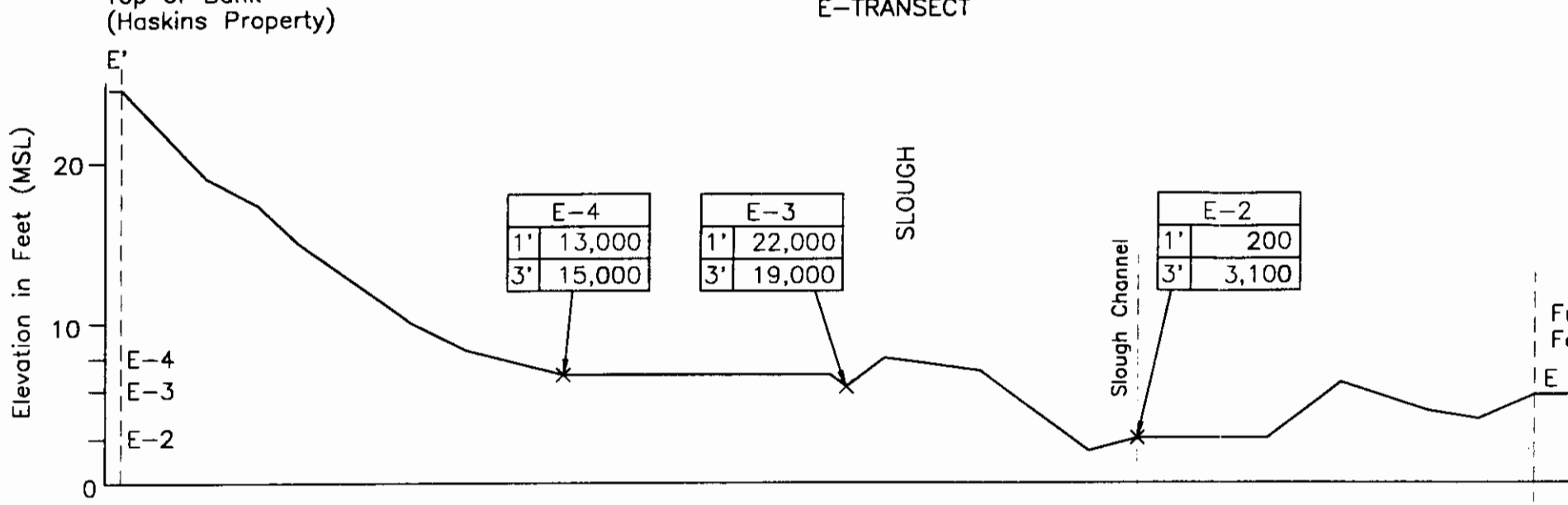
ANALYTICAL RESULTS OF SEMIVOLATILE ORGANIC COMPOUNDS FOR SOIL AND SEDIMENT SAMPLES

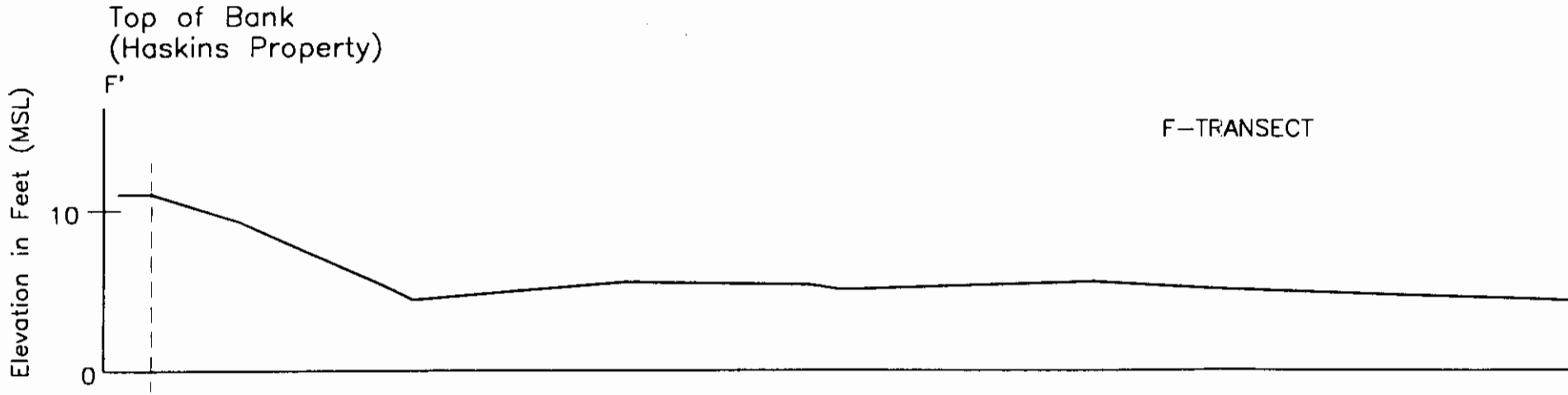
Soil Quality Report for Additional Soil Characterization Activities

	Tidal Mud Flats					
	MF-1	MF-1a	MF-1b	MF-1c	MF-1d	MF-1f
	1'	0.5'	0.5'	0.5'	1'	1'
Analyte	7/29/94	04/05/94	04/05/94	04/05/94	7/29/94	7/29/94
Acenaphthene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Acenaphthylene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Anthracene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzidine	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
Benzoic Acid	< 6,400	< 1,600	< 1,600	< 1,600	< 6,400	< 6,400
Benzo(a)anthracene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzo(b)fluoranthene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzo(k)fluoranthene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzo(g,h,i)perylene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzo(a)pyrene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Benzyl Alcohol	< 2,600	< 660	< 660	< 660	< 2,600	< 2,600
Bis(2-chloroxy)methane	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Bis(2-chloroethyl)ether	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Bis(2-chloroisopropyl)ether	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Bis(2-ethylhexyl)phthalate	< 1,300	690	860	590	< 1,300	< 1,300
4-Bromophenyl phenyl ether	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Butylbenzyl phthalate	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4-Chloroaniline	< 2,600	< 660	< 660	< 660	< 2,600	< 2,600
2-Chloronaphthalene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
4-Chlorophenyl phenyl ether	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Chrysene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Dibenzo(a,h)anthracene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Dibenzofuran	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Di-n-butylphthalate	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
1,2-Dichlorobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
1,3-Dichlorobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
1,4-Dichlorobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
3,3'-Dichlorobenzidine	< 2,600	< 660	< 660	< 660	< 2,600	< 2,600
Diethylphthalate	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Dimethylphthalate	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,4-Dinitrotoluene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2,6-Dinitrotoluene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Di-n-octylphthalate	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
1,2-Diphenylhydrazine	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Fluoranthene	< 1,300	430	< 330	< 330	< 1,300	< 1,300
Fluorene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Hexachlorobenzene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Hexachlorobutadiene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Hexachlorocyclopentadiene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Hexachloroethane	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Indeno(1,2,3-cd)pyrene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Isophorone	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
2-Methylnaphthalene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300
Naphthalene	< 1,300	< 330	< 330	< 330	< 1,300	< 1,300

FIGURES


B-12
B-14
SWB-10
WB-4
WB-6
WB-5
SW
SWB-7
Warehouse
SWB-8
SWB-11
WB-3
WB-1
SWB-3
WB-2
SB-1
SWB-1
SWB-2
F
SWB-6
MF-2f
MF-2e
MF-2a
MF-2c
MF-2b
MF-2
E
SWB-4
SWB-5
Marginal Wetlands
E-2
E-3
E-4
E'
F'

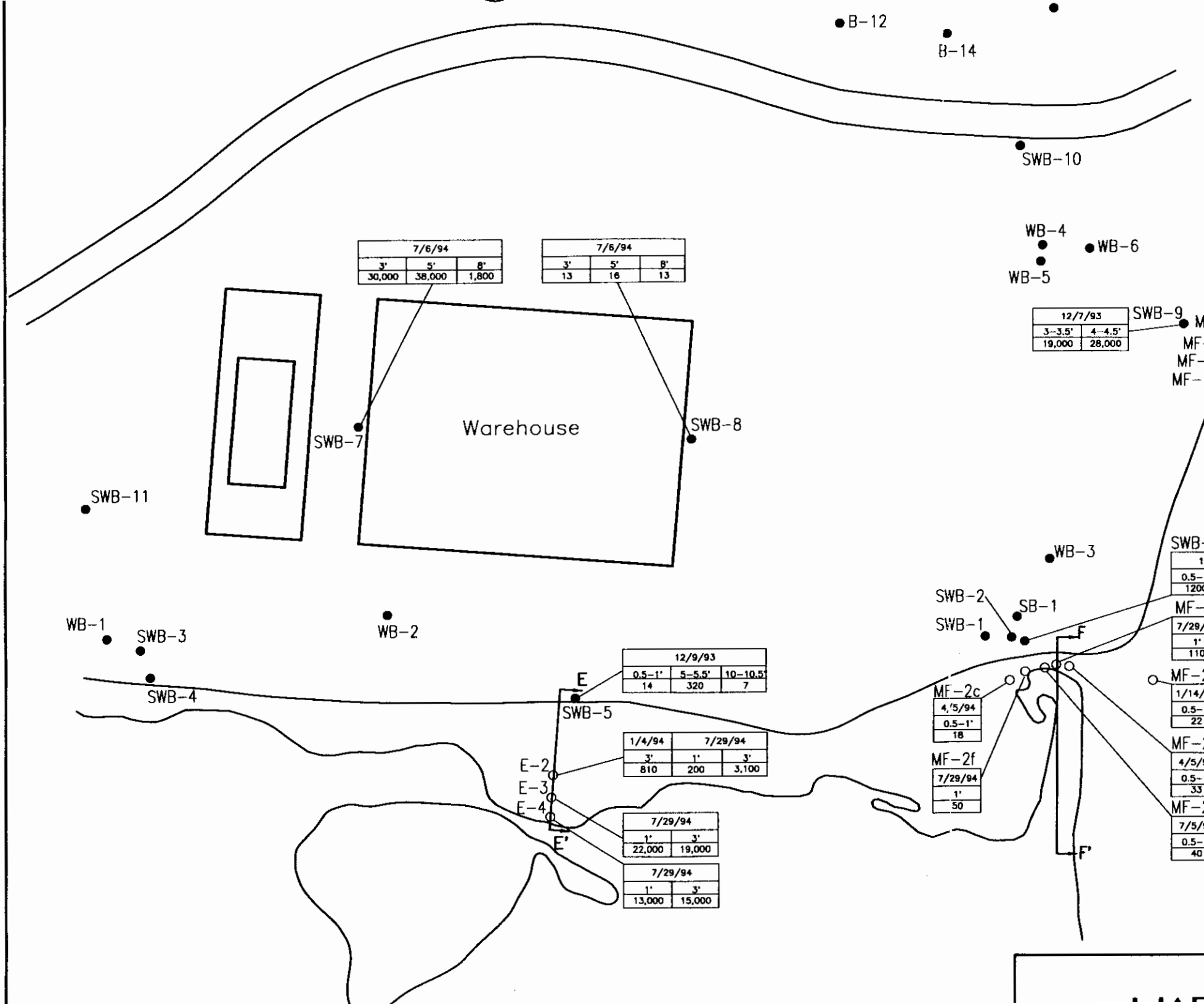


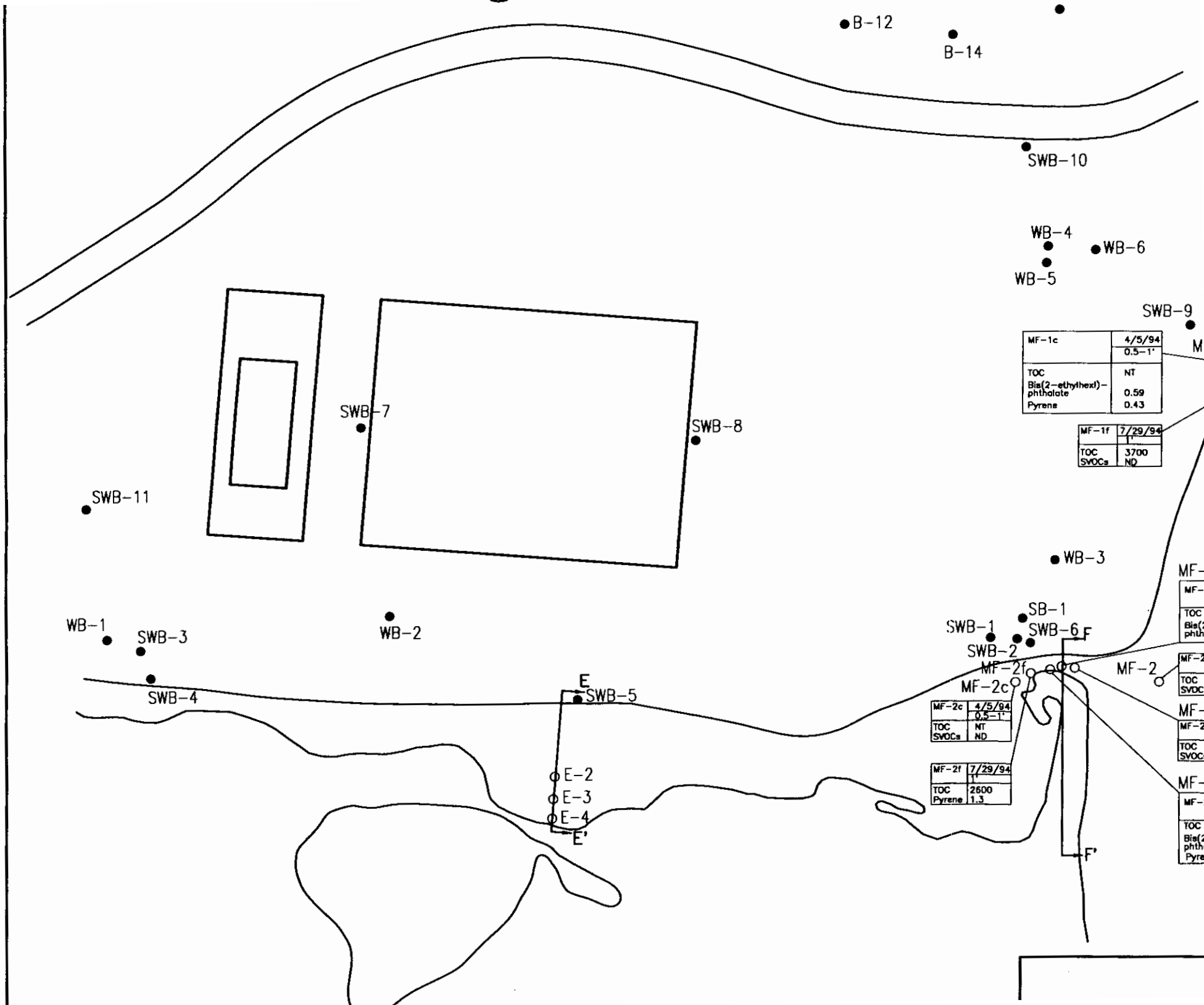


LEGEND

E–4	
1'	13,000

Approximate sediment sample location with depth of sample collected and total lead concentration reported in parts per million (ppm).


B-12
B-14
SWB-10
WB-4
WB-6
WB-5
7/6/94
3' 5' 8'
30,000 38,000 1,800
7/6/94
3' 5' 8'
13 16 13
12/7/93
3-3.5' 4-4.5'
19,000 28,000
SWB-9
SWB-7
Warehouse
SWB-8
SWB-11
WB-3
SWB-2
SB-1
SWB-1
WB-1
SWB-3
WB-2
12/9/93
0.5-1' 5-5.5' 10-10.5'
14 320 7
E
SWB-4
SWB-5
MF-2c
4/5/94
0.5-1'
18
1/4/94 7/29/94
3' 1' 3'
810 200 3,100
MF-2f
7/29/94
1'
50
E-2
E-3
E-4
E'
7/29/94
1' 3'
22,000 19,000
7/29/94
1' 3'
13,000 15,000
F
F'


B-12
B-14
SWB-10
WB-4
WB-6
WB-5
SWB-9
MF-1c
4/5/94
0.5-1'
TOC
NT
Bis(2-ethythexl)-phthalate
0.59
Pyrene
0.43
MF-1f
7/29/94
1'
TOC
3700
SVOCs
ND
SWB-7
SWB-8
SWB-11
WB-3
WB-1
SWB-3
WB-2
SB-1
SWB-1
SWB-6
F
SWB-2
MF-2f
MF-2
MF-2c
SWB-4
E
SWB-5
MF-2c
4/5/94
0.5-1'
TOC
NT
SVOCs
ND
MF-2f
7/29/94
1'
TOC
2600
Pyrene
1.3
E-2
E-3
E-4
E'
F'

APPENDIX A

Boring Logs

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel And Gravely Soils		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand And Sandy Soils		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	Description
Fine Grained Soils	Silts And Clays LL < 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL > 50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

SYMBOLS

- Standard penetration split spoon sample
- Modified California (Porter) sample
- Shelby tube sample
- Water level observed in boring
- Stable water level
- Blank casing
- Screened Casing
- Cement grout
- Bentonite
- Filter Pack

Visual Relative Moisture Content
Increasing Moisture Content

Dry
Damp
Moist
Wet
Saturated

Note: The lines separating strata on the logs represent approximate boundaries only. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

HARZA
Consulting Engineers & Scientists

BORING LOG LEGEND

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	FIGURE NO
K615L	November 1994	A-1

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	5 Feet	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Concrete 8 Inches **Baserock** 3-4 Inches							
FILL: Clay, sand and rock, dark gray, damp, coarse-grained, angular, to 1" diameter.							
FILL: Wood, silt, organics, black and irridescent green, wet, with wood, grasses, rocks.				2	0		
As above, saturated, irridescent green and black.		5		4	0		
FILL: Sand, rock, clay, gray and greenish brown, wet, trace silt.				5	0		
Bottom of Boring = 9.5 Feet Notes: 1. The stratification lines represent the approximate boundary between soil type and the transition may be gradual. 2. Boring backfilled with cement grout to grade.							

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EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615L	November 1994	SWB-7

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	Not Enc.	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Concrete 8 Inches **Baserock** 3-4 Inches							
FILL: Sand and rock, multicolored, damp, with clay.							
As above.				32	0		
As above, wet, trace weathered serpentine rocks.		5		42	0		
WEATHERED BEDROCK: SANDSTONE, dark gray, wet.				55	0		
Bottom of Boring = 9.5 Feet Notes: 1. The stratification lines represent the approximate boundary between soil types and the transition may be gradual. 2. Boring backfilled with cement grout to grade.							

HARZA
Consulting Engineers & Scientists

EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615L	November 1994	SWB-8

APPENDIX B

Laboratory Analytical Reports and Chain-of-Custody Records

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

American Environmental Net.
5440 Vincent Road
Pleasant Hill, CA 94523

Attention: Denise Harrington

Client Proj. ID: 9407662
Lab Proj. ID: 9408711

Sampled: 07/29/94
Received: 08/11/94
Analyzed: see below
Reported: 08/22/94

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9408711-01 Sample Desc : SOLID,MF-1D/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	3500
Lab No: 9408711-02 Sample Desc : SOLID,MF-1/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	5300
Lab No: 9408711-03 Sample Desc : SOLID,MF-1F/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	3700
Lab No: 9408711-04 Sample Desc : SOLID,MF-2D/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	1700
Lab No: 9408711-05 Sample Desc : SOLID,MF-2F/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	2800
Lab No: 9408711-06 Sample Desc : SOLID,MF-2E/1'				
Organic Carbon : Total	mg/kg	08/19/94	200	6000

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mark Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 9, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

American Environmental Network
3440 Vincent Road
Pleasant Hill, CA 94523
Attention: Denise Harrington

Client Project ID: 9407362
Matrix: Solid
QC Sample Group: 9408711 01-6
Reported: Aug 23, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Total Organic Carbon
Method:	EPA 415.1 415.1
Analyst:	K. Hynes
MS/MSD Batch#:	940871204
Date Prepared:	8/19/94
Date Analyzed:	8/19/94
Instrument I.D.#:	N/A
Conc. Spiked:	10000 mg/kg
Matrix Spike % Recovery:	89
Matrix Spike Duplicate % Recovery:	88
Relative % Difference:	12
LCS Batch#:	-
Date Prepared:	-
Date Analyzed:	-
Instrument I.D.#:	-
LCS % Recovery:	-
% Recovery Control Limits:	80-120

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

R-4, S-H

9407362

Page ____ of 1

Lab Job # ____

CHAIN-OF-CUSTODY RECORD

Project Number: K615-L

Project Name: Fuller-O'Brien Lead Isotope Study

Location: South S.F., CA

Sampler's Name (printed): Tacia Miller / Steve Henshaw

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals -	Total Lead	TOC			Remarks
MF-1A/1'	01A	7/29/94	X		2x6" Brass Liner				✓					X	✓			Upon completion of analyses & receipt of results, Please ship samples to Jenkins, Sanders & Associates
MF-1E/1'	02A								✓					X	✓			
MF-1F/1'	03A								✓					X	✓			
MF-2B/1'	04A								✓					X	✓			
MF-2A/1'	05A								✓					X	✓			
MF-2E/1'	06A								✓					X	✓			
E-2/1'	07A													X				
E-2/3'	08A													X				8-9-94 13:00 Per Tacia Miller, analyze all MF samples for 8270 & TOC on Standard TAT RB
E-3/1'	09A													X				
E-3/3'	10A													X				
E-4/1'	11A													X				
E-4/3'	12A													X				
																		8-11-94 Per Tacia Miller, all E samples sent to J.S.A. RB
																		7A-12A sent to JSA on 8/15 gg

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia Miller	7/29/94 15:50	[signature]
[signature]	7/29/94 18:10	
	7/29/94 1810	Received for Laboratory by (Signature): Lai L. Pruitt

Ship To: ____

Attention: ____

Phone No: ____

Requested Turnaround Time: Standard

Kaldveer Assoc. Contact: T. Miller

Remarks: Tacia will call next week to discuss shipment of samples to Jenkins, Sanders & Assoc.

Please address correspondence and return cooler # ____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

AUG-24-94 WED 13:41 AMERICAN ENV NETWORK FAX NO. 15109300256 P.04

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

REPORT DATE: 08/26/94

DATE(S) SAMPLED: 07/29/94

DATE RECEIVED: 07/29/94

AEN WORK ORDER: 9407362

ATTN: TACIA MILLER/STEVE HENSHAW
CLIENT PROJ. ID: K615-L
CLIENT PROJ. NAME: FULLER O'BRIEN

PROJECT SUMMARY:

On July 29, 1994, this laboratory received 12 soil sample(s).

Client requested samples be analyzed for inorganic and organic parameters. On August 9, 1994, client requested additional inorganic and organic analysis on 6 samples. Portions of samples for Total Organic Carbon were subcontracted to a DOHS certified laboratory. Subcontract report will follow at a later date. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARZA

SAMPLE ID: MF-1D/1'
AEN LAB NO: 9407362-01
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	65 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-1D/1'
AEN LAB NO: 9407362-01
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	ND	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-1/1'
AEN LAB NO: 9407362-02
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	130 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-1/1'
AEN LAB NO: 9407362-02
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	ND	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-1F/1'
AEN LAB NO: 9407362-03
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	150 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-1F/1'
AEN LAB NO: 9407362-03
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	ND	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2B/1'
AEN LAB NO: 9407362-04
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	50 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-2B/1'
AEN LAB NO: 9407362-04
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	ND	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2F/1'
AEN LAB NO: 9407362-05
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	50 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-2F/1'
AEN LAB NO: 9407362-05
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	1300 *	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2E/1'
AEN LAB NO: 9407362-06
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	110 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/12/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/17/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/17/94
Anthracene	120-12-7	ND	1300	ug/kg	08/17/94
Benzidine	92-87-5	ND	6400	ug/kg	08/17/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/17/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/17/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/17/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/17/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/17/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/17/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/17/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/17/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/17/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/17/94
Bis(2-ethylhexyl) Phthalate	117-81-7	5800 *	1300	ug/kg	08/17/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/17/94
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/17/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/17/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/17/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/17/94
Chrysene	218-01-9	ND	1300	ug/kg	08/17/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/17/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/17/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/17/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/17/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/17/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/17/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/17/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/17/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/17/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/17/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/17/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/17/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/17/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/17/94

HARZA

SAMPLE ID: MF-2E/1'
AEN LAB NO: 9407362-06
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Fluorene	86-73-7	ND	1300	ug/kg	08/17/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/17/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/17/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/17/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/17/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/17/94
Isophorone	78-59-1	ND	1300	ug/kg	08/17/94
2-Methylnaphthalene	91-57-6	ND	1300	ug/kg	08/17/94
Naphthalene	91-20-3	ND	1300	ug/kg	08/17/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/17/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/17/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/17/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/17/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/17/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/17/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/17/94
Phenanthrene	85-01-8	ND	1300	ug/kg	08/17/94
Pyrene	129-00-0	ND	1300	ug/kg	08/17/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/17/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/17/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/17/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/17/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/17/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/17/94
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/17/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/17/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/17/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/17/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/17/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/17/94
Phenol	108-95-2	ND	1300	ug/kg	08/17/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/17/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/17/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-2/1'
AEN LAB NO: 9407362-07
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	200 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-2/3'
AEN LAB NO: 9407362-08
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	3,100 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-3/1'
AEN LAB NO: 9407362-09
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	22,000 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-3/3'
AEN LAB NO: 9407362-10
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	19,000 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-4/1'
AEN LAB NO: 9407362-11
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	13,000 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: E-4/3'
AEN LAB NO: 9407362-12
AEN WORK ORDER: 9407362
CLIENT PROJ. ID: K615-L

DATE SAMPLED: 07/29/94
DATE RECEIVED: 07/29/94
REPORT DATE: 08/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Lead	EPA 7420	15,000 *	3	mg/kg	08/08/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9407362

CLIENT PROJECT ID: K615-L

Quality Control and Project Summary

Reporting limits elevated for EPA 8270 analytes due to high levels of non-target compounds. Samples were run at a dilution.

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration that can reliably be determined during routine laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix and method dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

AEN JOB NO: 9407362
DATE EXTRACTED: 08/12/94
INSTRUMENT: 11

Surrogate Standard Recovery Summary
Method: EPA 8270

Date Analyzed	Client Id.	Lab Id.	Percent Recovery					
			Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
08/17/94	MF-1D/1'	01	24	30	24	32	25	26
08/17/94	MF-1/1'	02	23	33	28	31	26	28
08/17/94	MF-1F/1'	03	27	34	29	32	26	26
08/17/94	MF-2B/1'	04	29	34	29	30	27	23
08/17/94	MF-2F/1'	05	23	37	31	34	27	28
08/17/94	MF-2E/1'	06	25	35	30	35	49	29

Current QC Limits

Surrogate	Percent Recovery
Nitrobenzene-d_5	23-120
2-Fluorobiphenyl	30-115
Terphenyl-d_{14}	18-137
Phenol-d_5	24-113
2-Fluorophenol	25-121
2,4,6-Tribromophenol	19-122

QUALITY CONTROL DATA

AEN JOB NO: 9407362
DATE EXTRACTED: 08/12/94
DATE ANALYZED: 08/17/94
INSTRUMENT: 11
SAMPLE SPIKED: 9407362-02
MATRIX: SOIL

Matrix Spike Recovery Summary
Method: EPA 8270

Analyte	Spike Added (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	80	30
2-Chlorophenol	3330	66	22
1,4-Dichlorobenzene	3400	77	6
N-Nitroso-di-n-propylamine	3320	59	12
1,2,4-Trichlorobenzene	3330	81	5
4-Chloro-3-methylphenol	3270	88	6
Acenaphthene	3330	95	4
4-Nitrophenol	3300	92	16
2,4-Dinitrotoluene	3330	62	10
Pentachlorophenol	3380	37	27
Pyrene	3320	120	4

Current QC Limits

Analyte	Percent Recovery	RPD
Phenol	35- 81	33
2-Chlorophenol	28- 88	26
1,4-Dichlorobenzene	28- 81	9
N-Nitroso-di-n-propylamine	27- 83	20
1,2,4-Trichlorobenzene	30- 82	22
4-Chloro-3-methylphenol	31-104	28
Acenaphthene	30-101	17
4-Nitrophenol	7-102	32
2,4-Dinitrotoluene	26- 86	24
Pentachlorophenol	12- 94	41
Pyrene	23-128	23

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

AEN JOB NO: 9407362
SAMPLE SPIKED: SAND
DATE(S) ANALYZED: 08/08/94
MATRIX: SOIL

Method Spike Recovery Summary

Analyte	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Control Limits % Rec. Limit	QC Control Limits RPD Limit
Pb, Lead	V22/7420	50	99	1	75-125	20

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-4, S-H

9407362

Page _ of 1

Lab Job # _____

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name	Location
K615-L	Fuller-O'Brien Lead Isotope Study	South S.F., CA

Sampler's Name (printed): Tacia Miller / Steve Henshaw

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil - Metals - Total Lead	TOC	Remarks
MF-1 2/1'	01A	7/29/94	X		2x6" Brass Liner				✓			X	✓	Upon completion of analyses & recpt of results, Please ship Samples to Jenkins, Sanders & Associates
MF-1 2/1'	02A								✓			X	✓	
MF-1 F/1'	03A								✓			X	✓	
MF-2 B/1'	04A								✓			X	✓	
MF-2 F/1'	05A								✓			X	✓	
MF-2 E/1'	06A								✓			X	✓	
E-2/1'	07A											X		8-9-94 13:00 Per Tacia Miller, analyze all MF samples for 8270 & TOC on Standard TAT RB
E-2/3'	08A											X		
E-3/1'	09A											X		
E-3/3'	10A											X		
E-4/1'	11A											X		
E-4/3'	12A											X		8-11-94 Per Tacia Miller, all E samples sent to J. S. A. RB
														7A-12A sent to JSA on 8/15 gg

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia Miller	7/29/94 15:50	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	7/29/94 18:10	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by (Signature)
	7/29/94 1810	Lai L. Pruitt

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Standard

Kaldveer Assoc. Contact: T. Miller

Remarks: Tacia will call next week to discuss shipment of samples to Jenkins, Sanders & Assoc.

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER
CLIENT PROJ. ID: K615-L
CLIENT PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 08/07/94

DATE(S) SAMPLED: 07/26/94

DATE RECEIVED: 07/27/94

AEN WORK ORDER: 9407302

PROJECT SUMMARY:

On July 27, 1994, this laboratory received 6 soil sample(s).

Client requested samples be analyzed for Lead. Sample identification, methodology, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

REPORT DATE: 08/07/94

HARZA

SAMPLE ID	AEN LAB #	ANALYTE	METHOD	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
SWB-7/3'	9407302-01A	Lead	EPA 7420	30.000 *	3	mg/kg	08/04/94
SWB-7/5'	9407302-02A	Lead	EPA 7420	38.000 *	3	mg/kg	08/04/94
SWB-7/8'	9407302-03A	Lead	EPA 7420	1.800 *	3	mg/kg	08/04/94
SWB-8/3'	9407302-04A	Lead	EPA 7420	13 *	3	mg/kg	08/04/94
SWB-8/5'	9407302-05A	Lead	EPA 7420	16 *	3	mg/kg	08/04/94
SWB-8/8'	9407302-06A	Lead	EPA 7420	13 *	3	mg/kg	08/04/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9407302

CLIENT PROJECT ID: K615-L

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

MATRIX: SOIL

AEN JOB NO: 9407302

CLIENT PROJ. ID: K615-L

DATE ANALYZED: 08/04/94

SAMPLE SPIKED: SAND

METHOD SPIKE RECOVERY SUMMARY

Compound	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Limits % Rec. Limit	QC Limits RPD Limit
Pb, Lead	V22/7420	50	115	<1	75-125	20

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

Page _ of 1

R-5, 5-L

Lab Job # 9407302

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name	Location
K615-L	Fuller O'Brien Addl Soil Characterization	South S.F., CA

Sampler's Name (printed): TACIA MILLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests	Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi - Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals - Total Lead				Remarks
SWB-7/3'	01A	7/24/94	X											X				
SWB-7/5'	02A													X				
SWB-7/8'	03A																	
SWB-8/3'	04A													X				
SWB-8/5'	05A													X				
SWB-8/8'	06A	↓	↓											X				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	7/26/94 10:30	Michael E. McMillan
Michael E. McMillan	7/27 11:25	
	7/27/94 11:25	Received for Laboratory by: (Signature) Lori L. Pruitt

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Standard

Kaldveer Assoc. Contact: T. Miller

Remarks: Upon completion of analyses, ship samples to Jenkins, Sanders & Associates

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

APPENDIX C

Laboratory Analytical Reports of Previous Investigations

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA KALDVEER
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: KE1495-1A-2112
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 01/17/94

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93

ADDITIONAL ANALYSIS
REQUESTED: 12/10-21/93-
01/04/94

AEN JOB NO: 9312093

PROJECT SUMMARY:

On December 7, 1993, this laboratory received eleven (11) soil samples and three (3) water samples.

Client requested six (6) soil samples and all water samples be analyzed for inorganic and organic parameters. Five (5) soil samples and sample fractions for filtered metals were placed on hold. On December 10, 1993, client requested additional analysis on samples for Copper. On December 21, 1993, client requested samples SWB-9/10-10.5' and SWB-9/15-15.5' be taken off hold and analyzed by EPA 8240 and 8270. On January 4, 1994, client requested samples SWB-6 and SWB-9 for filtered metals be taken off hold. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

Samples SWB-9/3-3.5', SWB-9/10-10.5' and SWB-9/4-4.5'(9312093-08,09,14) were analyzed dilute due to high levels of non-target compounds, and reporting limits were adjusted accordingly. Surrogate recoveries for these samples cannot be reported due to this dilution.

All other laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

Results FAXed 12/20/93-01/13/94

PAGES 2 - 15

WATER DATA

INCLUDED IN APPENDIX B

HARZA KALDVEER

SAMPLE ID: SWB-6/0.5-1.0'
AEN LAB NO: 9312093-04A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	52 *	1	mg/kg	12/16/93
Selenium	EPA 7740	4 *	2	mg/kg	12/16/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/16/93
Chromium	EPA 6010	71 *	1	mg/kg	12/16/93
Copper	EPA 6010	33 *	0.5	mg/kg	12/16/93
Lead	EPA 6010	1,200 *	1	mg/kg	12/16/93
Nickel	EPA 6010	66 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.1 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	62 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/14/93
Benzene	71-43-2	ND	5	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/14/93
Bromoform	75-25-2	ND	5	ug/kg	12/14/93
Bromomethane	74-83-9	ND	10	ug/kg	12/14/93
2-Butanone	78-93-3	ND	100	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/14/93
Chloroethane	75-00-3	ND	10	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/14/93
Chloroform	67-66-3	ND	5	ug/kg	12/14/93
Chloromethane	74-87-3	ND	10	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-6/0.5-1.0'
AEN LAB NO: 9312093-04A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/14/93
Styrene	100-42-5	ND	5	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/14/93
Toluene	108-88-3	ND	5	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/14/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/09/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/18/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/18/93
Anthracene	120-12-7	ND	330	ug/kg	12/18/93
Benzidine	92-87-5	ND	1600	ug/kg	12/18/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/18/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/18/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/18/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/18/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/18/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/18/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/18/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/18/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/18/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/18/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1600	ug/kg	12/18/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/18/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/18/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/18/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/18/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/18/93
Chrysene	218-01-9	ND	330	ug/kg	12/18/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/18/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/18/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-6/0.5-1.0'
AEN LAB NO: 9312093-04A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/18/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/18/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/18/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/18/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/18/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/18/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/18/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/18/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/18/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/18/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/18/93
Fluorene	86-73-7	ND	330	ug/kg	12/18/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/18/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/18/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/18/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/18/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/18/93
Isophorone	78-59-1	ND	330	ug/kg	12/18/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/18/93
Naphthalene	91-20-3	ND	330	ug/kg	12/18/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/18/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/18/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/18/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/18/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/18/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/18/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/18/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/18/93
Pyrene	129-00-0	ND	330	ug/kg	12/18/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/18/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/18/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/18/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/18/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/18/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/18/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/18/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/18/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/18/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/18/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/18/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/18/93
Phenol	108-95-2	ND	330	ug/kg	12/18/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-6/0.5-1.0'
AEN LAB NO: 9312093-04A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/18/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-6/5.5-6'
AEN LAB NO: 9312093-05A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	ND	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/16/93
Chromium	EPA 6010	200 *	1	mg/kg	12/16/93
Copper	EPA 6010	69 *	0.5	mg/kg	12/16/93
Lead	EPA 6010	61 *	1	mg/kg	12/16/93
Nickel	EPA 6010	250 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.3 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	77 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/14/93
Benzene	71-43-2	ND	5	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/14/93
Bromoform	75-25-2	ND	5	ug/kg	12/14/93
Bromomethane	74-83-9	ND	10	ug/kg	12/14/93
2-Butanone	78-93-3	ND	100	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/14/93
Chloroethane	75-00-3	ND	10	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/14/93
Chloroform	67-66-3	ND	5	ug/kg	12/14/93
Chloromethane	74-87-3	ND	10	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-6/5.5-6'
AEN LAB NO: 9312093-05A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/14/93
Styrene	100-42-5	ND	5	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/14/93
Toluene	108-88-3	ND	5	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/14/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/08/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/20/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/20/93
Anthracene	120-12-7	ND	330	ug/kg	12/20/93
Benzidine	92-87-5	ND	1600	ug/kg	12/20/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/20/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/20/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/20/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/20/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/20/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/20/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/20/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/20/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/20/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/20/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/20/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/20/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/20/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/20/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/20/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/20/93
Chrysene	218-01-9	ND	330	ug/kg	12/20/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/20/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/20/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-6/5.5-6'
AEN LAB NO: 9312093-05A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/20/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/20/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/20/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/20/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/20/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/20/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/20/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/20/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/20/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/20/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/20/93
Fluorene	86-73-7	ND	330	ug/kg	12/20/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/20/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/20/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/20/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/20/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/20/93
Isophorone	78-59-1	ND	330	ug/kg	12/20/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/20/93
Naphthalene	91-20-3	ND	330	ug/kg	12/20/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/20/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/20/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/20/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/20/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/20/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/20/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/20/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/20/93
Pyrene	129-00-0	ND	330	ug/kg	12/20/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/20/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/20/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/20/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/20/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/20/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/20/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/20/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/20/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/20/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/20/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/20/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/20/93
Phenol	108-95-2	ND	330	ug/kg	12/20/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-6/5.5-6'
AEN LAB NO: 9312093-05A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/20/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-9/3-3.5'
AEN LAB NO: 9312093-08A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	16 *	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	14 *	1	mg/kg	12/16/93
Chromium	EPA 6010	220 *	1	mg/kg	12/16/93
Copper	EPA 6010	230 *	5	mg/kg	12/17/93
Lead	EPA 6010	19,000 *	10	mg/kg	12/16/93
Nickel	EPA 6010	110 *	10	mg/kg	12/16/93
Silver	EPA 6010	9 *	1	mg/kg	12/16/93
Zinc	EPA 6010	10,000 *	10	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	10000	ug/kg	12/16/93
Benzene	71-43-2	ND	500	ug/kg	12/16/93
Bromodichloromethane	75-27-4	ND	500	ug/kg	12/16/93
Bromoform	75-25-2	ND	500	ug/kg	12/16/93
Bromomethane	74-83-9	ND	1000	ug/kg	12/16/93
2-Butanone	78-93-3	ND	10000	ug/kg	12/16/93
Carbon Disulfide	75-15-0	ND	1000	ug/kg	12/16/93
Carbon Tetrachloride	56-23-5	ND	500	ug/kg	12/16/93
Chlorobenzene	108-90-7	ND	500	ug/kg	12/16/93
Chloroethane	75-00-3	ND	1000	ug/kg	12/16/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	1000	ug/kg	12/16/93
Chloroform	67-66-3	ND	500	ug/kg	12/16/93
Chloromethane	74-87-3	ND	1000	ug/kg	12/16/93
Dibromochloromethane	124-48-1	ND	500	ug/kg	12/16/93
1,1-Dichloroethane	75-34-3	ND	500	ug/kg	12/16/93
1,2-Dichloroethane	107-06-2	ND	500	ug/kg	12/16/93
1,1-Dichloroethene	75-35-4	ND	500	ug/kg	12/16/93
cis-1,2-Dichloroethene	156-59-2	ND	500	ug/kg	12/16/93
trans-1,2-Dichloroethene	156-60-5	ND	500	ug/kg	12/16/93
1,2-Dichloropropane	78-87-5	ND	500	ug/kg	12/16/93
cis-1,3-Dichloropropene	10061-01-5	ND	500	ug/kg	12/16/93

HARZA KALDVEER

SAMPLE ID: SWB-9/3-3.5'
AEN LAB NO: 9312093-08A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT		REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND		500	ug/kg	12/16/93
Ethylbenzene	100-41-4	600	*	500	ug/kg	12/16/93
2-Hexanone	591-78-6	ND		5000	ug/kg	12/16/93
Methylene Chloride	75-09-2	ND		500	ug/kg	12/16/93
4-Methyl-2-pentanone	108-10-1	ND		5000	ug/kg	12/16/93
Styrene	100-42-5	ND		500	ug/kg	12/16/93
1,1,2,2-Tetrachloroethane	79-34-5	ND		500	ug/kg	12/16/93
Tetrachloroethene	127-18-4	ND		500	ug/kg	12/16/93
Toluene	108-88-3	ND		500	ug/kg	12/16/93
1,1,1-Trichloroethane	71-55-6	ND		500	ug/kg	12/16/93
1,1,2-Trichloroethane	79-00-5	ND		500	ug/kg	12/16/93
Trichloroethene	79-01-6	ND		500	ug/kg	12/16/93
Vinyl Acetate	108-05-4	ND		5000	ug/kg	12/16/93
Vinyl Chloride	75-01-4	ND		1000	ug/kg	12/16/93
Xylenes, Total	1330-20-7	14,000	*	1000	ug/kg	12/16/93
#Extraction for BNAs	**EPA 3550**	-			Extrn Date	12/09/93
Semi-Volatile Organics	**EPA 8270**					
Acenaphthene	83-32-9	43,000	*	8300	ug/kg	12/20/93
Acenaphthylene	208-96-8	ND		8300	ug/kg	12/20/93
Anthracene	120-12-7	24,000	*	8300	ug/kg	12/20/93
Benzidine	92-87-5	ND		42000	ug/kg	12/20/93
Benzoic Acid	65-85-0	ND		42000	ug/kg	12/20/93
Benzo(a)anthracene	56-55-3	8,400	*	8300	ug/kg	12/20/93
Benzo(b)fluoranthene	205-99-2	11,000	*	8300	ug/kg	12/20/93
Benzo(k)fluoranthene	207-08-9	ND		8300	ug/kg	12/20/93
Benzo(g,h,i)perylene	191-24-2	ND		8300	ug/kg	12/20/93
Benzo(a)pyrene	50-32-8	ND		8300	ug/kg	12/20/93
Benzyl Alcohol	100-51-6	ND		17000	ug/kg	12/20/93
Bis(2-chloroethoxy)methane	111-91-1	ND		8300	ug/kg	12/20/93
Bis(2-choroethyl) Ether	111-44-4	ND		8300	ug/kg	12/20/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND		8300	ug/kg	12/20/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND		8300	ug/kg	12/20/93
4-Bromophenyl Phenyl Ether	101-55-3	ND		8300	ug/kg	12/20/93
Butylbenzyl Phthalate	85-68-7	ND		8300	ug/kg	12/20/93
4-Chloroaniline	106-47-8	ND		17000	ug/kg	12/20/93
2-Chloronapththalene	91-58-7	ND		8300	ug/kg	12/20/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND		8300	ug/kg	12/20/93
Chrysene	218-01-9	9,900	*	8300	ug/kg	12/20/93
Dibenzo(a,h)anthracene	53-70-3	ND		8300	ug/kg	12/20/93
Dibenzofuran	132-64-9	23,000	*	8300	ug/kg	12/20/93
Di-n-butyl Phthalate	84-74-2	ND		8300	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-9/3-3.5'
AEN LAB NO: 9312093-08A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	8300	ug/kg	12/20/93
1,3-Dichlorobenzene	541-73-1	ND	8300	ug/kg	12/20/93
1,4-Dichlorobenzene	106-46-7	ND	8300	ug/kg	12/20/93
3,3'-Dichlorobenzidine	91-94-1	ND	17000	ug/kg	12/20/93
Diethyl Phthalate	84-66-2	ND	8300	ug/kg	12/20/93
Dimethyl Phthalate	131-11-3	ND	8300	ug/kg	12/20/93
2,4-Dinitrotoluene	121-14-2	ND	8300	ug/kg	12/20/93
2,6-Dinitrotoluene	606-20-2	ND	8300	ug/kg	12/20/93
Di-n-octyl Phthalate	117-84-0	ND	8300	ug/kg	12/20/93
1,2-Diphenylhydrazine	122-66-7	ND	8300	ug/kg	12/20/93
Fluoranthene	206-44-0	50,000 *	8300	ug/kg	12/20/93
Fluorene	86-73-7	36,000 *	8300	ug/kg	12/20/93
Hexachlorobenzene	118-74-1	ND	8300	ug/kg	12/20/93
Hexachlorobutadiene	87-68-3	ND	8300	ug/kg	12/20/93
Hexachlorocyclopentadiene	77-47-4	ND	8300	ug/kg	12/20/93
Hexachloroethane	67-72-1	ND	8300	ug/kg	12/20/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	8300	ug/kg	12/20/93
Isophorone	78-59-1	ND	8300	ug/kg	12/20/93
2-Methylnaphthalene	91-57-6	75,000 *	8300	ug/kg	12/20/93
Naphthalene	91-20-3	73,000 *	8300	ug/kg	12/20/93
2-Nitroaniline	88-74-4	ND	42000	ug/kg	12/20/93
3-Nitroaniline	99-09-2	ND	42000	ug/kg	12/20/93
4-Nitroaniline	100-01-6	ND	42000	ug/kg	12/20/93
Nitrobenzene	98-95-3	ND	8300	ug/kg	12/20/93
N-Nitrosodimethylamine	62-75-9	ND	8300	ug/kg	12/20/93
N-Nitrosodiphenylamine	86-30-6	ND	8300	ug/kg	12/20/93
N-Nitrosodi-n-propylamine	621-64-7	ND	8300	ug/kg	12/20/93
Phenanthrene	85-01-8	83,000 *	8300	ug/kg	12/20/93
Pyrene	129-00-0	28,000 *	8300	ug/kg	12/20/93
1,2,4-Trichlorobenzene	120-82-1	ND	8300	ug/kg	12/20/93
4-Chloro-3-methylphenol	59-50-7	ND	8300	ug/kg	12/20/93
2-Chlorophenol	95-57-8	ND	8300	ug/kg	12/20/93
2,4-Dichlorophenol	120-83-2	ND	8300	ug/kg	12/20/93
2,4-Dimethylphenol	105-67-9	ND	8300	ug/kg	12/20/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	42000	ug/kg	12/20/93
2,4-Dinitrophenol	51-28-5	ND	42000	ug/kg	12/20/93
2-Methylphenol	95-48-7	ND	8300	ug/kg	12/20/93
4-Methylphenol	106-44-5	ND	8300	ug/kg	12/20/93
2-Nitrophenol	88-75-5	ND	8300	ug/kg	12/20/93
4-Nitrophenol	100-02-7	ND	42000	ug/kg	12/20/93
Pentachlorophenol	87-86-5	ND	42000	ug/kg	12/20/93
Phenol	108-95-2	ND	8300	ug/kg	12/20/93
2,4,5-Trichlorophenol	95-95-4	ND	8300	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-9/3-3.5'
AEN LAB NO: 9312093-08A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	8300	ug/kg	12/20/93

Reporting limits elevated for metals due to matrix interference.

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-9/10-10.5'
AEN LAB NO: 9312093-09A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
VOCs in Soil	**EPA 8240**				
Acetone	67-64-1	ND	10000	ug/kg	12/21/93
Benzene	71-43-2	ND	500	ug/kg	12/21/93
Bromodichloromethane	75-27-4	ND	500	ug/kg	12/21/93
Bromoform	75-25-2	ND	500	ug/kg	12/21/93
Bromomethane	74-83-9	ND	1000	ug/kg	12/21/93
2-Butanone	78-93-3	ND	10000	ug/kg	12/21/93
Carbon Disulfide	75-15-0	ND	1000	ug/kg	12/21/93
Carbon Tetrachloride	56-23-5	ND	500	ug/kg	12/21/93
Chlorobenzene	108-90-7	ND	500	ug/kg	12/21/93
Chloroethane	75-00-3	ND	1000	ug/kg	12/21/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	1000	ug/kg	12/21/93
Chloroform	67-66-3	ND	500	ug/kg	12/21/93
Chloromethane	74-87-3	ND	1000	ug/kg	12/21/93
Dibromochloromethane	124-48-1	ND	500	ug/kg	12/21/93
1,1-Dichloroethane	75-34-3	ND	500	ug/kg	12/21/93
1,2-Dichloroethane	107-06-2	ND	500	ug/kg	12/21/93
1,1-Dichloroethene	75-35-4	ND	500	ug/kg	12/21/93
cis-1,2-Dichloroethene	156-59-2	ND	500	ug/kg	12/21/93
trans-1,2-Dichloroethene	156-60-5	ND	500	ug/kg	12/21/93
1,2-Dichloropropane	78-87-5	ND	500	ug/kg	12/21/93
cis-1,3-Dichloropropene	10061-01-5	ND	500	ug/kg	12/21/93
trans-1,3-Dichloropropene	10061-02-6	ND	500	ug/kg	12/21/93
Ethylbenzene	100-41-4	ND	500	ug/kg	12/21/93
2-Hexanone	591-78-6	ND	5000	ug/kg	12/21/93
Methylene Chloride	75-09-2	ND	500	ug/kg	12/21/93
4-Methyl-2-pentanone	108-10-1	ND	5000	ug/kg	12/21/93
Styrene	100-42-5	ND	500	ug/kg	12/21/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	500	ug/kg	12/21/93
Tetrachloroethene	127-18-4	ND	500	ug/kg	12/21/93
Toluene	108-88-3	ND	500	ug/kg	12/21/93
1,1,1-Trichloroethane	71-55-6	ND	500	ug/kg	12/21/93
1,1,2-Trichloroethane	79-00-5	ND	500	ug/kg	12/21/93
Trichloroethene	79-01-6	ND	500	ug/kg	12/21/93
Vinyl Acetate	108-05-4	ND	5000	ug/kg	12/21/93
Vinyl Chloride	75-01-4	ND	1000	ug/kg	12/21/93
Xylenes, Total	1330-20-7	ND	1000	ug/kg	12/21/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/21/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	17000	ug/kg	01/04/94

HARZA KALDVEER

SAMPLE ID: SWB-9/10-10.5'
AEN LAB NO: 9312093-09A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Acenaphthylene	208-96-8	ND	17000	ug/kg	01/04/94
Anthracene	120-12-7	ND	17000	ug/kg	01/04/94
Benzidine	92-87-5	ND	83000	ug/kg	01/04/94
Benzoic Acid	65-85-0	ND	83000	ug/kg	01/04/94
Benzo(a)anthracene	56-55-3	ND	17000	ug/kg	01/04/94
Benzo(b)fluoranthene	205-99-2	ND	17000	ug/kg	01/04/94
Benzo(k)fluoranthene	207-08-9	ND	17000	ug/kg	01/04/94
Benzo(g,h,i)perylene	191-24-2	ND	17000	ug/kg	01/04/94
Benzo(a)pyrene	50-32-8	ND	17000	ug/kg	01/04/94
Benzyl Alcohol	100-51-6	ND	33000	ug/kg	01/04/94
Bis(2-chloroethoxy)methane	111-91-1	ND	17000	ug/kg	01/04/94
Bis(2-choroethyl) Ether	111-44-4	ND	17000	ug/kg	01/04/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	17000	ug/kg	01/04/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	17000	ug/kg	01/04/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	17000	ug/kg	01/04/94
Butylbenzyl Phthalate	85-68-7	ND	17000	ug/kg	01/04/94
4-Chloroaniline	106-47-8	ND	33000	ug/kg	01/04/94
2-Chloronapththalene	91-58-7	ND	17000	ug/kg	01/04/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	17000	ug/kg	01/04/94
Chrysene	218-01-9	ND	17000	ug/kg	01/04/94
Dibenzo(a,h)anthracene	53-70-3	ND	17000	ug/kg	01/04/94
Dibenzofuran	132-64-9	ND	17000	ug/kg	01/04/94
Di-n-butyl Phthalate	84-74-2	ND	17000	ug/kg	01/04/94
1,2-Dichlorobenzene	95-50-1	ND	17000	ug/kg	01/04/94
1,3-Dichlorobenzene	541-73-1	ND	17000	ug/kg	01/04/94
1,4-Dichlorobenzene	106-46-7	ND	17000	ug/kg	01/04/94
3,3'-Dichlorobenzidine	91-94-1	ND	33000	ug/kg	01/04/94
Diethyl Phthalate	84-66-2	ND	17000	ug/kg	01/04/94
Dimethyl Phthalate	131-11-3	ND	17000	ug/kg	01/04/94
2,4-Dinitrotoluene	121-14-2	ND	17000	ug/kg	01/04/94
2,6-Dinitrotoluene	606-20-2	ND	17000	ug/kg	01/04/94
Di-n-octyl Phthalate	117-84-0	ND	17000	ug/kg	01/04/94
1,2-Diphenylhydrazine	122-66-7	ND	17000	ug/kg	01/04/94
Fluoranthene	206-44-0	ND	17000	ug/kg	01/04/94
Fluorene	86-73-7	ND	17000	ug/kg	01/04/94
Hexachlorobenzene	118-74-1	ND	17000	ug/kg	01/04/94
Hexachlorobutadiene	87-68-3	ND	17000	ug/kg	01/04/94
Hexachlorocyclopentadiene	77-47-4	ND	17000	ug/kg	01/04/94
Hexachloroethane	67-72-1	ND	17000	ug/kg	01/04/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	17000	ug/kg	01/04/94
Isophorone	78-59-1	ND	17000	ug/kg	01/04/94
2-Methylnaphthalene	91-57-6	ND	17000	ug/kg	01/04/94
Naphthalene	91-20-3	ND	17000	ug/kg	01/04/94

HARZA KALDVEER

SAMPLE ID: SWB-9/10-10.5'
AEN LAB NO: 9312093-09A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2-Nitroaniline	88-74-4	ND	83000	ug/kg	01/04/94
3-Nitroaniline	99-09-2	ND	83000	ug/kg	01/04/94
4-Nitroaniline	100-01-6	ND	83000	ug/kg	01/04/94
Nitrobenzene	98-95-3	ND	17000	ug/kg	01/04/94
N-Nitrosodimethylamine	62-75-9	ND	17000	ug/kg	01/04/94
N-Nitrosodiphenylamine	86-30-6	ND	17000	ug/kg	01/04/94
N-Nitrosodi-n-propylamine	621-64-7	ND	17000	ug/kg	01/04/94
Phenanthrene	85-01-8	ND	17000	ug/kg	01/04/94
Pyrene	129-00-0	ND	17000	ug/kg	01/04/94
1,2,4-Trichlorobenzene	120-82-1	ND	17000	ug/kg	01/04/94
4-Chloro-3-methylphenol	59-50-7	ND	17000	ug/kg	01/04/94
2-Chlorophenol	95-57-8	ND	17000	ug/kg	01/04/94
2,4-Dichlorophenol	120-83-2	ND	17000	ug/kg	01/04/94
2,4-Dimethylphenol	105-67-9	ND	17000	ug/kg	01/04/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	83000	ug/kg	01/04/94
2,4-Dinitrophenol	51-28-5	ND	83000	ug/kg	01/04/94
2-Methylphenol	95-48-7	ND	17000	ug/kg	01/04/94
4-Methylphenol	106-44-5	ND	17000	ug/kg	01/04/94
2-Nitrophenol	88-75-5	ND	17000	ug/kg	01/04/94
4-Nitrophenol	100-02-7	ND	83000	ug/kg	01/04/94
Pentachlorophenol	87-86-5	ND	83000	ug/kg	01/04/94
Phenol	108-95-2	ND	17000	ug/kg	01/04/94
2,4,5-Trichlorophenol	95-95-4	ND	17000	ug/kg	01/04/94
2,4,6-Trichlorophenol	88-06-2	ND	17000	ug/kg	01/04/94

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-9/15-15.5'
AEN LAB NO: 9312093-10A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
VOCs in Soil	**EPA 8240**				
Acetone	67-64-1	ND	10000	ug/kg	12/21/93
Benzene	71-43-2	ND	500	ug/kg	12/21/93
Bromodichloromethane	75-27-4	ND	500	ug/kg	12/21/93
Bromoform	75-25-2	ND	500	ug/kg	12/21/93
Bromomethane	74-83-9	ND	1000	ug/kg	12/21/93
2-Butanone	78-93-3	ND	10000	ug/kg	12/21/93
Carbon Disulfide	75-15-0	ND	1000	ug/kg	12/21/93
Carbon Tetrachloride	56-23-5	ND	500	ug/kg	12/21/93
Chlorobenzene	108-90-7	ND	500	ug/kg	12/21/93
Chloroethane	75-00-3	ND	1000	ug/kg	12/21/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	1000	ug/kg	12/21/93
Chloroform	67-66-3	ND	500	ug/kg	12/21/93
Chloromethane	74-87-3	ND	1000	ug/kg	12/21/93
Dibromochloromethane	124-48-1	ND	500	ug/kg	12/21/93
1,1-Dichloroethane	75-34-3	ND	500	ug/kg	12/21/93
1,2-Dichloroethane	107-06-2	ND	500	ug/kg	12/21/93
1,1-Dichloroethene	75-35-4	ND	500	ug/kg	12/21/93
cis-1,2-Dichloroethene	156-59-2	ND	500	ug/kg	12/21/93
trans-1,2-Dichloroethene	156-60-5	ND	500	ug/kg	12/21/93
1,2-Dichloropropane	78-87-5	ND	500	ug/kg	12/21/93
cis-1,3-Dichloropropene	10061-01-5	ND	500	ug/kg	12/21/93
trans-1,3-Dichloropropene	10061-02-6	ND	500	ug/kg	12/21/93
Ethylbenzene	100-41-4	ND	500	ug/kg	12/21/93
2-Hexanone	591-78-6	ND	5000	ug/kg	12/21/93
Methylene Chloride	75-09-2	ND	500	ug/kg	12/21/93
4-Methyl-2-pentanone	108-10-1	ND	5000	ug/kg	12/21/93
Styrene	100-42-5	ND	500	ug/kg	12/21/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	500	ug/kg	12/21/93
Tetrachloroethene	127-18-4	ND	500	ug/kg	12/21/93
Toluene	108-88-3	ND	500	ug/kg	12/21/93
1,1,1-Trichloroethane	71-55-6	ND	500	ug/kg	12/21/93
1,1,2-Trichloroethane	79-00-5	ND	500	ug/kg	12/21/93
Trichloroethene	79-01-6	ND	500	ug/kg	12/21/93
Vinyl Acetate	108-05-4	ND	5000	ug/kg	12/21/93
Vinyl Chloride	75-01-4	ND	1000	ug/kg	12/21/93
Xylenes, Total	1330-20-7	ND	1000	ug/kg	12/21/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/21/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	1700	ug/kg	12/30/93

HARZA KALDVEER

SAMPLE ID: SWB-9/15-15.5'
AEN LAB NO: 9312093-10A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Acenaphthylene	208-96-8	ND	1700	ug/kg	12/30/93
Anthracene	120-12-7	ND	1700	ug/kg	12/30/93
Benzidine	92-87-5	ND	8300	ug/kg	12/30/93
Benzoic Acid	65-85-0	ND	8300	ug/kg	12/30/93
Benzo(a)anthracene	56-55-3	ND	1700	ug/kg	12/30/93
Benzo(b)fluoranthene	205-99-2	ND	1700	ug/kg	12/30/93
Benzo(k)fluoranthene	207-08-9	ND	1700	ug/kg	12/30/93
Benzo(g,h,i)perylene	191-24-2	ND	1700	ug/kg	12/30/93
Benzo(a)pyrene	50-32-8	ND	1700	ug/kg	12/30/93
Benzyl Alcohol	100-51-6	ND	3300	ug/kg	12/30/93
Bis(2-chloroethoxy)methane	111-91-1	ND	1700	ug/kg	12/30/93
Bis(2-choroethyl) Ether	111-44-4	ND	1700	ug/kg	12/30/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1700	ug/kg	12/30/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1700	ug/kg	12/30/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	1700	ug/kg	12/30/93
Butylbenzyl Phthalate	85-68-7	ND	1700	ug/kg	12/30/93
4-Chloroaniline	106-47-8	ND	3300	ug/kg	12/30/93
2-Chloronapththalene	91-58-7	ND	1700	ug/kg	12/30/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1700	ug/kg	12/30/93
Chrysene	218-01-9	ND	1700	ug/kg	12/30/93
Dibenzo(a,h)anthracene	53-70-3	ND	1700	ug/kg	12/30/93
Dibenzofuran	132-64-9	ND	1700	ug/kg	12/30/93
Di-n-butyl Phthalate	84-74-2	ND	1700	ug/kg	12/30/93
1,2-Dichlorobenzene	95-50-1	ND	1700	ug/kg	12/30/93
1,3-Dichlorobenzene	541-73-1	ND	1700	ug/kg	12/30/93
1,4-Dichlorobenzene	106-46-7	ND	1700	ug/kg	12/30/93
3,3'-Dichlorobenzidine	91-94-1	ND	3300	ug/kg	12/30/93
Diethyl Phthalate	84-66-2	ND	1700	ug/kg	12/30/93
Dimethyl Phthalate	131-11-3	ND	1700	ug/kg	12/30/93
2,4-Dinitrotoluene	121-14-2	ND	1700	ug/kg	12/30/93
2,6-Dinitrotoluene	606-20-2	ND	1700	ug/kg	12/30/93
Di-n-octyl Phthalate	117-84-0	ND	1700	ug/kg	12/30/93
1,2-Diphenylhydrazine	122-66-7	ND	1700	ug/kg	12/30/93
Fluoranthene	206-44-0	ND	1700	ug/kg	12/30/93
Fluorene	86-73-7	ND	1700	ug/kg	12/30/93
Hexachlorobenzene	118-74-1	ND	1700	ug/kg	12/30/93
Hexachlorobutadiene	87-68-3	ND	1700	ug/kg	12/30/93
Hexachlorocyclopentadiene	77-47-4	ND	1700	ug/kg	12/30/93
Hexachloroethane	67-72-1	ND	1700	ug/kg	12/30/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1700	ug/kg	12/30/93
Isophorone	78-59-1	ND	1700	ug/kg	12/30/93
2-Methylnaphthalene	91-57-6	ND	1700	ug/kg	12/30/93
Naphthalene	91-20-3	ND	1700	ug/kg	12/30/93

HARZA KALDVEER

SAMPLE ID: SWB-9/15-15.5'
AEN LAB NO: 9312093-10A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2-Nitroaniline	88-74-4	ND	8300	ug/kg	12/30/93
3-Nitroaniline	99-09-2	ND	8300	ug/kg	12/30/93
4-Nitroaniline	100-01-6	ND	8300	ug/kg	12/30/93
Nitrobenzene	98-95-3	ND	1700	ug/kg	12/30/93
N-Nitrosodimethylamine	62-75-9	ND	1700	ug/kg	12/30/93
N-Nitrosodiphenylamine	86-30-6	ND	1700	ug/kg	12/30/93
N-Nitrosodi-n-propylamine	621-64-7	ND	1700	ug/kg	12/30/93
Phenanthrene	85-01-8	ND	1700	ug/kg	12/30/93
Pyrene	129-00-0	ND	1700	ug/kg	12/30/93
1,2,4-Trichlorobenzene	120-82-1	ND	1700	ug/kg	12/30/93
4-Chloro-3-methylphenol	59-50-7	ND	1700	ug/kg	12/30/93
2-Chlorophenol	95-57-8	ND	1700	ug/kg	12/30/93
2,4-Dichlorophenol	120-83-2	ND	1700	ug/kg	12/30/93
2,4-Dimethylphenol	105-67-9	ND	1700	ug/kg	12/30/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	8300	ug/kg	12/30/93
2,4-Dinitrophenol	51-28-5	ND	8300	ug/kg	12/30/93
2-Methylphenol	95-48-7	ND	1700	ug/kg	12/30/93
4-Methylphenol	106-44-5	ND	1700	ug/kg	12/30/93
2-Nitrophenol	88-75-5	ND	1700	ug/kg	12/30/93
4-Nitrophenol	100-02-7	ND	8300	ug/kg	12/30/93
Pentachlorophenol	87-86-5	ND	8300	ug/kg	12/30/93
Phenol	108-95-2	ND	1700	ug/kg	12/30/93
2,4,5-Trichlorophenol	95-95-4	ND	1700	ug/kg	12/30/93
2,4,6-Trichlorophenol	88-06-2	ND	1700	ug/kg	12/30/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-10/1-1.5'
AEN LAB NO: 9312093-11A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	ND	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/16/93
Chromium	EPA 6010	29 *	1	mg/kg	12/16/93
Copper	EPA 6010	40 *	0.5	mg/kg	12/16/93
Lead	EPA 6010	10 *	1	mg/kg	12/16/93
Nickel	EPA 6010	30 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.1 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	65 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/14/93
Benzene	71-43-2	ND	5	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/14/93
Bromoform	75-25-2	ND	5	ug/kg	12/14/93
Bromomethane	74-83-9	ND	10	ug/kg	12/14/93
2-Butanone	78-93-3	ND	100	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/14/93
Chloroethane	75-00-3	ND	10	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/14/93
Chloroform	67-66-3	ND	5	ug/kg	12/14/93
Chloromethane	74-87-3	ND	10	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-10/1-1.5'
AEN LAB NO: 9312093-11A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/14/93
Styrene	100-42-5	ND	5	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/14/93
Toluene	108-88-3	ND	5	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/14/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/09/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/18/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/18/93
Anthracene	120-12-7	ND	330	ug/kg	12/18/93
Benzidine	92-87-5	ND	1600	ug/kg	12/18/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/18/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/18/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/18/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/18/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/18/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/18/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/18/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/18/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/18/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/18/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/18/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/18/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/18/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/18/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/18/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/18/93
Chrysene	218-01-9	ND	330	ug/kg	12/18/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/18/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/18/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-10/1-1.5'
AEN LAB NO: 9312093-11A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/18/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/18/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/18/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/18/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/18/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/18/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/18/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/18/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/18/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/18/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/18/93
Fluorene	86-73-7	ND	330	ug/kg	12/18/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/18/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/18/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/18/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/18/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/18/93
Isophorone	78-59-1	ND	330	ug/kg	12/18/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/18/93
Naphthalene	91-20-3	ND	330	ug/kg	12/18/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/18/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/18/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/18/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/18/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/18/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/18/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/18/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/18/93
Pyrene	129-00-0	ND	330	ug/kg	12/18/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/18/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/18/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/18/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/18/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/18/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/18/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/18/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/18/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/18/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/18/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/18/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/18/93
Phenol	108-95-2	ND	330	ug/kg	12/18/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-10/1-1.5'
AEN LAB NO: 9312093-11A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/18/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-10/4-4.5'
AEN LAB NO: 9312093-12A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	ND	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/16/93
Chromium	EPA 6010	22 *	1	mg/kg	12/16/93
Copper	EPA 6010	57 *	0.5	mg/kg	12/16/93
Lead	EPA 6010	11 *	1	mg/kg	12/16/93
Nickel	EPA 6010	28 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.2 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	80 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/14/93
Benzene	71-43-2	ND	5	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/14/93
Bromoform	75-25-2	ND	5	ug/kg	12/14/93
Bromomethane	74-83-9	ND	10	ug/kg	12/14/93
2-Butanone	78-93-3	ND	100	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/14/93
Chloroethane	75-00-3	ND	10	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/14/93
Chloroform	67-66-3	ND	5	ug/kg	12/14/93
Chloromethane	74-87-3	ND	10	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-10/4-4.5'
AEN LAB NO: 9312093-12A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	30	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/14/93
Styrene	100-42-5	ND	5	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/14/93
Toluene	108-88-3	ND	5	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/14/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/09/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/18/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/18/93
Anthracene	120-12-7	ND	330	ug/kg	12/18/93
Benzidine	92-87-5	ND	1600	ug/kg	12/18/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/18/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/18/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/18/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/18/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/18/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/18/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/18/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/18/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/18/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/18/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/18/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/18/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/18/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/18/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/18/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/18/93
Chrysene	218-01-9	ND	330	ug/kg	12/18/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/18/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/18/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-10/4-4.5'
AEN LAB NO: 9312093-12A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/18/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/18/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/18/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/18/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/18/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/18/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/18/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/18/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/18/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/18/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/18/93
Fluorene	86-73-7	ND	330	ug/kg	12/18/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/18/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/18/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/18/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/18/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/18/93
Isophorone	78-59-1	ND	330	ug/kg	12/18/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/18/93
Naphthalene	91-20-3	ND	330	ug/kg	12/18/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/18/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/18/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/18/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/18/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/18/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/18/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/18/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/18/93
Pyrene	129-00-0	ND	330	ug/kg	12/18/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/18/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/18/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/18/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/18/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/18/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/18/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/18/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/18/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/18/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/18/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/18/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/18/93
Phenol	108-95-2	ND	330	ug/kg	12/18/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/18/93

HARZA KALDVEER

SAMPLE ID: SWB-10/4-4.5'
AEN LAB NO: 9312093-12A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/18/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-9/4-4.5'
AEN LAB NO: 9312093-14A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	27 *	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	3.7 *	0.1	mg/kg	12/16/93
Chromium	EPA 6010	290 *	1	mg/kg	12/16/93
Copper	EPA 6010	200 *	0.5	mg/kg	12/16/93
Lead	EPA 6010	28,000 *	1	mg/kg	12/17/93
Nickel	EPA 6010	72 *	1	mg/kg	12/16/93
Silver	EPA 6010	37 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	11,000 *	1	mg/kg	12/17/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	10000	ug/kg	12/15/93
Benzene	71-43-2	ND	500	ug/kg	12/15/93
Bromodichloromethane	75-27-4	ND	500	ug/kg	12/15/93
Bromoform	75-25-2	ND	500	ug/kg	12/15/93
Bromomethane	74-83-9	ND	1000	ug/kg	12/15/93
2-Butanone	78-93-3	ND	10000	ug/kg	12/15/93
Carbon Disulfide	75-15-0	ND	1000	ug/kg	12/15/93
Carbon Tetrachloride	56-23-5	ND	500	ug/kg	12/15/93
Chlorobenzene	108-90-7	ND	500	ug/kg	12/15/93
Chloroethane	75-00-3	ND	1000	ug/kg	12/15/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	1000	ug/kg	12/15/93
Chloroform	67-66-3	ND	500	ug/kg	12/15/93
Chloromethane	74-87-3	ND	1000	ug/kg	12/15/93
Dibromochloromethane	124-48-1	ND	500	ug/kg	12/15/93
1,1-Dichloroethane	75-34-3	ND	500	ug/kg	12/15/93
1,2-Dichloroethane	107-06-2	ND	500	ug/kg	12/15/93
1,1-Dichloroethene	75-35-4	ND	500	ug/kg	12/15/93
cis-1,2-Dichloroethene	156-59-2	ND	500	ug/kg	12/15/93
trans-1,2-Dichloroethene	156-60-5	ND	500	ug/kg	12/15/93
1,2-Dichloropropane	78-87-5	ND	500	ug/kg	12/15/93
cis-1,3-Dichloropropene	10061-01-5	ND	500	ug/kg	12/15/93

HARZA KALDVEER

SAMPLE ID: SWB-9/4-4.5'
AEN LAB NO: 9312093-14A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	500	ug/kg	12/15/93
Ethylbenzene	100-41-4	ND	500	ug/kg	12/15/93
2-Hexanone	591-78-6	ND	5000	ug/kg	12/15/93
Methylene Chloride	75-09-2	ND	500	ug/kg	12/15/93
4-Methyl-2-pentanone	108-10-1	ND	5000	ug/kg	12/15/93
Styrene	100-42-5	ND	500	ug/kg	12/15/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	500	ug/kg	12/15/93
Tetrachloroethene	127-18-4	ND	500	ug/kg	12/15/93
Toluene	108-88-3	ND	500	ug/kg	12/15/93
1,1,1-Trichloroethane	71-55-6	ND	500	ug/kg	12/15/93
1,1,2-Trichloroethane	79-00-5	ND	500	ug/kg	12/15/93
Trichloroethene	79-01-6	ND	500	ug/kg	12/15/93
Vinyl Acetate	108-05-4	ND	5000	ug/kg	12/15/93
Vinyl Chloride	75-01-4	ND	1000	ug/kg	12/15/93
Xylenes, Total	1330-20-7	ND	1000	ug/kg	12/15/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/09/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	6,800 *	3300	ug/kg	12/20/93
Acenaphthylene	208-96-8	ND	3300	ug/kg	12/20/93
Anthracene	120-12-7	ND	3300	ug/kg	12/20/93
Benzidine	92-87-5	ND	16000	ug/kg	12/20/93
Benzoic Acid	65-85-0	ND	16000	ug/kg	12/20/93
Benzo(a)anthracene	56-55-3	ND	3300	ug/kg	12/20/93
Benzo(b)fluoranthene	205-99-2	ND	3300	ug/kg	12/20/93
Benzo(k)fluoranthene	207-08-9	ND	3300	ug/kg	12/20/93
Benzo(g,h,i)perylene	191-24-2	ND	3300	ug/kg	12/20/93
Benzo(a)pyrene	50-32-8	ND	3300	ug/kg	12/20/93
Benzyl Alcohol	100-51-6	ND	6600	ug/kg	12/20/93
Bis(2-chloroethoxy)methane	111-91-1	ND	3300	ug/kg	12/20/93
Bis(2-choroethyl) Ether	111-44-4	ND	3300	ug/kg	12/20/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	3300	ug/kg	12/20/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	3300	ug/kg	12/20/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	3300	ug/kg	12/20/93
Butylbenzyl Phthalate	85-68-7	ND	3300	ug/kg	12/20/93
4-Chloroaniline	106-47-8	ND	6600	ug/kg	12/20/93
2-Chloronapththalene	91-58-7	ND	3300	ug/kg	12/20/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	3300	ug/kg	12/20/93
Chrysene	218-01-9	ND	3300	ug/kg	12/20/93
Dibenzo(a,h)anthracene	53-70-3	ND	3300	ug/kg	12/20/93
Dibenzofuran	132-64-9	ND	3300	ug/kg	12/20/93
Di-n-butyl Phthalate	84-74-2	ND	3300	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-9/4-4.5'
AEN LAB NO: 9312093-14A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	3300	ug/kg	12/20/93
1,3-Dichlorobenzene	541-73-1	ND	3300	ug/kg	12/20/93
1,4-Dichlorobenzene	106-46-7	ND	3300	ug/kg	12/20/93
3,3'-Dichlorobenzidine	91-94-1	ND	6600	ug/kg	12/20/93
Diethyl Phthalate	84-66-2	ND	3300	ug/kg	12/20/93
Dimethyl Phthalate	131-11-3	ND	3300	ug/kg	12/20/93
2,4-Dinitrotoluene	121-14-2	ND	3300	ug/kg	12/20/93
2,6-Dinitrotoluene	606-20-2	ND	3300	ug/kg	12/20/93
Di-n-octyl Phthalate	117-84-0	ND	3300	ug/kg	12/20/93
1,2-Diphenylhydrazine	122-66-7	ND	3300	ug/kg	12/20/93
Fluoranthene	206-44-0	ND	3300	ug/kg	12/20/93
Fluorene	86-73-7	3,700 *	3300	ug/kg	12/20/93
Hexachlorobenzene	118-74-1	ND	3300	ug/kg	12/20/93
Hexachlorobutadiene	87-68-3	ND	3300	ug/kg	12/20/93
Hexachlorocyclopentadiene	77-47-4	ND	3300	ug/kg	12/20/93
Hexachloroethane	67-72-1	ND	3300	ug/kg	12/20/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	3300	ug/kg	12/20/93
Isophorone	78-59-1	ND	3300	ug/kg	12/20/93
2-Methylnaphthalene	91-57-6	17,000 *	3300	ug/kg	12/20/93
Naphthalene	91-20-3	13,000 *	3300	ug/kg	12/20/93
2-Nitroaniline	88-74-4	ND	16000	ug/kg	12/20/93
3-Nitroaniline	99-09-2	ND	16000	ug/kg	12/20/93
4-Nitroaniline	100-01-6	ND	16000	ug/kg	12/20/93
Nitrobenzene	98-95-3	ND	3300	ug/kg	12/20/93
N-Nitrosodimethylamine	62-75-9	ND	3300	ug/kg	12/20/93
N-Nitrosodiphenylamine	86-30-6	ND	3300	ug/kg	12/20/93
N-Nitrosodi-n-propylamine	621-64-7	ND	3300	ug/kg	12/20/93
Phenanthrene	85-01-8	6,300 *	3300	ug/kg	12/20/93
Pyrene	129-00-0	ND	3300	ug/kg	12/20/93
1,2,4-Trichlorobenzene	120-82-1	ND	3300	ug/kg	12/20/93
4-Chloro-3-methylphenol	59-50-7	ND	3300	ug/kg	12/20/93
2-Chlorophenol	95-57-8	ND	3300	ug/kg	12/20/93
2,4-Dichlorophenol	120-83-2	ND	3300	ug/kg	12/20/93
2,4-Dimethylphenol	105-67-9	ND	3300	ug/kg	12/20/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	16000	ug/kg	12/20/93
2,4-Dinitrophenol	51-28-5	ND	16000	ug/kg	12/20/93
2-Methylphenol	95-48-7	ND	3300	ug/kg	12/20/93
4-Methylphenol	106-44-5	ND	3300	ug/kg	12/20/93
2-Nitrophenol	88-75-5	ND	3300	ug/kg	12/20/93
4-Nitrophenol	100-02-7	ND	16000	ug/kg	12/20/93
Pentachlorophenol	87-86-5	ND	16000	ug/kg	12/20/93
Phenol	108-95-2	ND	3300	ug/kg	12/20/93
2,4,5-Trichlorophenol	95-95-4	ND	3300	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-9/4-4.5'
AEN LAB NO: 9312093-14A
AEN WORK ORDER: 9312093
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/07/93
DATE RECEIVED: 12/07/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	3300	ug/kg	12/20/93

ND = Not detected
* = Indicates value above reporting limit

QUALITY CONTROL DATA

INSTRUMENT: 12

AEN JOB NO: 9312093

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloroethane-d_4	Toluene-d_8	p-Bromofluorobenzene
12/14/93	SWB-6/0.5-1.0'	04	111	101	95
12/14/93	SWB-6/5.5-6'	05	106	105	104
12/15/93	SWB-9/3-3.5'	08	104	97	104
12/21/93	SWB-9/10-10.5'	09	105	92	104
12/21/93	SWB-9/15-15.5'	10	104	97	98
12/14/93	SWB-10/1-1.5'	11	105	102	101
12/14/93	SWB-10/4-4.5'	12	104	102	100
12/15/93	SWB-9/4-4.5'	14	95	96	100

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d_4	(68-141)
Toluene-d_8	(89-119)
p-Bromofluorobenzene	(85-112)

QUALITY CONTROL DATA

DATE ANALYZED: 12/15/93
SAMPLE SPIKED: 9312093-11
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	85	2
Trichloroethene	50.0	94	3
Benzene	50.0	96	2
Toluene	50.0	97	1
Chlorobenzene	50.0	95	2

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE ANALYZED: 12/23/93
SAMPLE SPIKED: 9312129-09
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	141	1
Trichloroethene	50.0	103	<1
Benzene	50.0	116	2
Toluene	50.0	113	3
Chlorobenzene	50.0	107	<1

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

INSTRUMENT: 12 AEN JOB NO: 9312093

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloroethane-d_4	Toluene-d_8	p-Bromofluorobenzene
12/17/93	SWB-6	01	106	99	108
12/16/93	SWB-9	02	102	97	106
12/16/93	SWB-10	03	100	99	101

CURRENT QC LIMITS (Revised 11/21/93)

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d4	(77-123)
Toluene-d8	(90-108)
p-Bromofluorobenzene	(89-109)

QUALITY CONTROL DATA

DATE ANALYZED: 12/16/93
SAMPLE SPIKED: 9312090-01
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	102	9
Trichloroethene	50.0	102	2
Benzene	50.0	102	1
Toluene	50.0	103	<1
Chlorobenzene	50.0	98	<1

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(81-123)	12
Trichloroethene	(87-112)	9
Benzene	(92-116)	12
Toluene	(91-116)	12
Chlorobenzene	(92-113)	10

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/09,21/93 AEN JOB NO: 9312093

CLIENT PROJ. ID: KE1495-1A-2112 INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Sample Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/18/93	SWB-6/0.5-1.0'	04	38	60	53	51	33	66
12/20/93	SWB-6/5.5-6'	05	49	68	44	57	51	40
12/20/93	SWB-9/3-3.5'	08	D	D	D	D	D	D
01/04/94	SWB-9/10-10.5'	09	D	D	D	D	D	D
12/29/93	SWB-9/15-15.5'	10	51	113	81	30	48	50
12/18/93	SWB-10/1-1.5'	11	53	62	40	55	49	54
12/18/94	SWB-10/4-4.5'	12	59	71	50	67	57	54
12/20/93	SWB-9/4-4.5'	14	D	D	D	D	D	D

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d_{14}	(18-137)
Phenol-d_5	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

D = Surrogates diluted out

QUALITY CONTROL DATA

DATE EXTRACTED: 12/14/93
DATE ANALYZED: 12/20/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
SAMPLE SPIKED: 9312105-01
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	80	5
2-Chlorophenol	3330	79	2
1,4-Dichlorobenzene	3400	70	4
N-Nitroso-di-n-propylamine	3320	90	2
1,2,4-Trichlorobenzene	3330	71	3
4-Chloro-3-methylphenol	3270	102	5
Acenaphthene	3330	77	5
4-Nitrophenol	3300	71	9
2,4-Dinitrotoluene	3330	68	5
Pentachlorophenol	3380	63	6
Pyrene	3320	55	12

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/13/93 AEN JOB NO: 9312093

CLIENT PROJ. ID: K1495-1A-2112 INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Sample Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/20/93	SWB-6	01	60	50	37	54	49	50
12/20/93	SWB-9	02	62	54	43	77	67	62
12/20/93	SWB-10	03	52	60	39	61	46	49

CURRENT QC LIMITS (REVISED 01/08/92)

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(47-104)
2-Fluorobiphenyl	(49-106)
Terphenyl-d_{14}	(36-138)
Phenol-d_5	(46-105)
2-Fluorophenol	(40- 97)
2,4,6-Tribromophenol	(37-145)

QUALITY CONTROL DATA

DATE EXTRACTED: 12/13/93
DATE ANALYZED: 12/21/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
Phenol	200	68	8
2-Chlorophenol	200	79	<1
1,4-Dichlorobenzene	204	59	7
N-Nitroso-di-n-propylamine	199	74	9
1,2,4-Trichlorobenzene	200	59	10
4-Chloro-3-methylphenol	196	93	3
Acenaphthene	200	71	9
4-Nitrophenol	198	72	8
2,4-Dinitrotoluene	200	72	4
Pentachlorophenol	203	67	8
Pyrene	199	41	12

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(12-110)	42
2-Chlorophenol	(27-123)	40
1,4-Dichlorobenzene	(36- 97)	28
4-Nitroso-di-n-propylamine	(41-116)	38
1,2,4-Trichlorobenzene	(39- 98)	28
4-Chloro-3-methylphenol	(23- 97)	42
Acenaphthene	(46-118)	31
4-Nitrophenol	(10- 80)	50
2,4-Dinitrotoluene	(24- 96)	38
Pentachlorophenol	(9-103)	50
Pyrene	(26-127)	31

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312093
SAMPLE SPIKED: SAND
DIGESTION DATE: 12/14/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/kg)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	54	2	50-150	20
As, Arsenic	4000/7060	20	84	<1	75-125	20
Cd, Cadmium	ICP/6010	10	84	2	75-125	20
Cr, Chromium	ICP/6010	50	92	2	75-125	20
Cu, Copper	ICP/6010	50	91	3	75-125	20
Ni, Nickel	ICP/6010	50	90	2	75-125	20
Pb, Lead	ICP/6010	50	90	3	75-125	20
Se, Selenium	4000/7740	40	91	9	73-126	14
Zn, Zinc	ICP/6010	50	87	2	75-125	20

RPD = Relative Percent Difference

Daily method blanks for all associated runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312093

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 12/13/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.1	101	2	66-127	11
As, Arsenic	4000/7060	0.04	105	4	90-115	12
Cd, Cadmium	ICP/6010	0.05	99	5	71-134	12
Cr, Chromium	ICP/6010	0.2	104	2	85-114	6
Cu, Copper	ICP/6010	0.25	95	2	86-112	5
Ni, Nickel	ICP/6010	0.5	99	2	87-114	5
Pb, Lead	ICP/6010	0.5	99	2	87-115	6
Se, Selenium	4000/7740	0.08	102	2	76-131	14
Zn, Zinc	ICP/6010	0.5	101	2	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312093

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 01/05-10/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.25	83	4	66-127	11
As, Arsenic	4000/7060	0.04	95	9	90-115	12
Cd, Cadmium	ICP/6010	0.25	103	5	71-134	12
Cr, Chromium	ICP/6010	0.2	103	3	85-114	6
Cu, Copper	ICP/6010	0.25	103	3	86-112	5
Ni, Nickel	ICP/6010	0.5	102	3	87-114	5
Pb, Lead	ICP/6010	0.5	101	6	87-115	6
Se, Selenium	4000/7740	0.08	95	1	76-131	14
Zn, Zinc	ICP/6010	0.5	108	2	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

Lab Job # 9312093

CHAIN-OF-CUSTODY RECORD

Project Number: KE1495-1A-2112

Project Name: Fuller O'Brien

Location: So. S.F., CA

Sampler's Name (printed): Tacia Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container
SWB-6/0.5-10'	04A	12/7/93	X		2"x6" Brass Liner
SWB-6/5.5-6'	05A *		X		
SWB-6/10-10.5'	06A		X		
SWB-6/15-15.5'	07A		X		
SWB-7/3-3.5'	08A		X		
SWB-7/6-6.5'	09A		X		
SWB-7/15-15.5'	10A		X		
SWB-10/1-1.5'	11A		X		
SWB-10/4-4.5'	12A		X		
SWB-10/8.5-9'	13A		X		
~~SWB-9/10-10.5'~~					
SWB-9/14-14.5'	14A		X		

Analytical Tests: Method 8015 – TPH as Gasoline; Method 8015 – TPH as Diesel; Method 8240 – Volatile Organics; Method 8270 – Semi-Volatile Organics; Method 8010 – Halogenated Volatile Organics; Method 8080 – Organochlorine Pesticides & PCB's; Waste Oil – Metals –

KA Sample I.D. Number	Analytical Tests	Remarks
SWB-6/0.5-10'	8015 Gas; 8015 Diesel; Waste Oil – Metals	12/08 per Tacia, pls. cancel Cu analysis. MPS 12/10 add Cu
SWB-6/5.5-6'	8015 Gas; 8015 Diesel; Waste Oil – Metals	Hold
SWB-6/10-10.5'	8015 Gas; 8015 Diesel	Hold
SWB-7/3-3.5'	8015 Gas; 8015 Diesel; Waste Oil – Metals	
SWB-7/6-6.5'	8015 Gas; 8015 Diesel	~~Hold~~ > analyze for 8240 + 8270 per Tacia 12/21 - DSH
SWB-7/15-15.5'	8015 Gas; 8015 Diesel	~~Hold~~
SWB-10/1-1.5'	8015 Gas; 8015 Diesel; Waste Oil – Metals	
SWB-10/4-4.5'	8015 Gas; 8015 Diesel; Waste Oil – Metals	
SWB-10/8.5-9'	8015 Gas; 8015 Diesel	Hold
~~SWB-9/10-10.5'~~		1-5-94 - per client send sample SWB-9/4-4.5 to Jenkins, Sanders + Assoc. ggr
SWB-9/14-14.5'	8015 Gas; 8015 Diesel; Waste Oil – Metals	Metals for Pb, Cd, Cr, Zn, Ni, Se, Ag, Zn, Cu MPS 12/08

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	12-7-93 17:30	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	12-7-93 20:10	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
	12/7/93 2010	Denise Harrington

Ship To: * Sample SWB-6/5.5-6' returned to client 1/11-ggr

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation:

HARZA KALDVEER
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: KE1495-1A-2112
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 01/17/94

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93

ADDITIONAL ANALYSIS
REQUESTED: 12/10-23/93-
01/04-07/94
AEN JOB NO: 9312129

PROJECT SUMMARY:

On December 9, 1993, this laboratory received seventeen (17) soil samples and five (5) water samples.

Client requested twelve (12) soil samples and all water samples be analyzed for inorganic and organic parameters. Five (5) soil samples and sample fractions for filtered metals were placed on hold. On December 10, 1993, client requested additional analysis on samples for Copper. On December 23, 1993, client requested sample SWB-5/10-10.5' be taken off hold and analyzed by EPA 8240. On January 4 and 7, 1994, client requested samples SWB-7 and SWB-11 for filtered metals be taken off hold. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

Due to laboratory error, samples SWB-7/10-10.5' and SWB-5/5-5.5'(9312129-09,12) was analyzed outside holding time for EPA Method 8240.

All other laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

Results FAXed 12/22/93-01/13/94

HARZA KALDVEER

SAMPLE ID: SWB-3/0.5-1'
AEN LAB NO: 9312129-01A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	12 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	170 *	1	mg/kg	12/18/93
Copper	EPA 6010	25 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	97 *	1	mg/kg	12/18/93
Nickel	EPA 6010	300 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.3 *	0.1	mg/kg	12/18/93
Zinc	EPA 6010	53 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-3/0.5-1'
AEN LAB NO: 9312129-01A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/15/93
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-3/0.5-1'
AEN LAB NO: 9312129-01A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-3/0.5-1'
AEN LAB NO: 9312129-01A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-3/5-5.5'
AEN LAB NO: 9312129-02A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	12 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	92 *	1	mg/kg	12/18/93
Copper	EPA 6010	28 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	23 *	1	mg/kg	12/18/93
Nickel	EPA 6010	140 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.2 *	0.1	mg/kg	12/18/93
Zinc	EPA 6010	51 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-3/5-5.5'
AEN LAB NO: 9312129-02A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-3/5-5.5'
AEN LAB NO: 9312129-02A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-3/5-5.5'
AEN LAB NO: 9312129-02A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-4/0.5-1'
AEN LAB NO: 9312129-04A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	7 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	200 *	1	mg/kg	12/18/93
Copper	EPA 6010	240 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	210 *	1	mg/kg	12/18/93
Nickel	EPA 6010	310 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.4 *	0.1	mg/kg	12/18/93
Zinc	EPA 6010	68 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/20/93
Benzene	71-43-2	ND	5	ug/kg	12/20/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/20/93
Bromoform	75-25-2	ND	5	ug/kg	12/20/93
Bromomethane	74-83-9	ND	10	ug/kg	12/20/93
2-Butanone	78-93-3	ND	100	ug/kg	12/20/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/20/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/20/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/20/93
Chloroethane	75-00-3	ND	10	ug/kg	12/20/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/20/93
Chloroform	67-66-3	ND	5	ug/kg	12/20/93
Chloromethane	74-87-3	ND	10	ug/kg	12/20/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/20/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/20/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/20/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/20/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/20/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/20/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/20/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-4/0.5-1'
AEN LAB NO: 9312129-04A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/20/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/20/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/20/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/20/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/20/93
Styrene	100-42-5	ND	5	ug/kg	12/20/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/20/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/20/93
Toluene	108-88-3	ND	5	ug/kg	12/20/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/20/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/20/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/20/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/20/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/20/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/20/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	4600	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-4/0.5-1'
AEN LAB NO: 9312129-04A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg.	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-4/0.5-1'
AEN LAB NO: 9312129-04A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-4/5.0-5.5'
AEN LAB NO: 9312129-05A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	3 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	57 *	1	mg/kg	12/18/93
Copper	EPA 6010	13 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	10 *	1	mg/kg	12/18/93
Nickel	EPA 6010	76 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.1 *	0.1	mg/kg	12/17/93
Zinc	EPA 6010	26 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/20/93
Benzene	71-43-2	ND	5	ug/kg	12/20/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/20/93
Bromoform	75-25-2	ND	5	ug/kg	12/20/93
Bromomethane	74-83-9	ND	10	ug/kg	12/20/93
2-Butanone	78-93-3	ND	100	ug/kg	12/20/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/20/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/20/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/20/93
Chloroethane	75-00-3	ND	10	ug/kg	12/20/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/20/93
Chloroform	67-66-3	ND	5	ug/kg	12/20/93
Chloromethane	74-87-3	ND	10	ug/kg	12/20/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/20/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/20/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/20/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/20/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/20/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/20/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/20/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-4/5.0-5.5'
AEN LAB NO: 9312129-05A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/20/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/20/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/20/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/20/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/20/93
Styrene	100-42-5	ND	5	ug/kg	12/20/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/20/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/20/93
Toluene	108-88-3	ND	5	ug/kg	12/20/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/20/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/20/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/20/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/20/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/20/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/20/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-4/5.0-5.5'
AEN LAB NO: 9312129-05A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-4/5.0-5.5'
AEN LAB NO: 9312129-05A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-7/1-1.5'
AEN LAB NO: 9312129-07A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	6 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	0.1 *	0.1	mg/kg	12/18/93
Chromium	EPA 6010	74 *	1	mg/kg	12/18/93
Copper	EPA 6010	41 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	270 *	1	mg/kg	12/18/93
Nickel	EPA 6010	150 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.2 *	0.1	mg/kg	12/17/93
Zinc	EPA 6010	72 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-7/1-1.5'
AEN LAB NO: 9312129-07A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT		REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND		5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND		5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND		50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND		5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND		50	ug/kg	12/19/93
Styrene	100-42-5	ND		5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND		5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND		5	ug/kg	12/19/93
Toluene	108-88-3	ND		5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND		5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND		5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND		5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND		50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND		10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND		10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-			Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**					
Acenaphthene	83-32-9	360	*	330	ug/kg	12/24/93
Acenaphthylene	208-96-8	ND		330	ug/kg	12/24/93
Anthracene	120-12-7	500	*	330	ug/kg	12/24/93
Benzidine	92-87-5	ND		1600	ug/kg	12/24/93
Benzoic Acid	65-85-0	ND		1600	ug/kg	12/24/93
Benzo(a)anthracene	56-55-3	370	*	330	ug/kg	12/24/93
Benzo(b)fluoranthene	205-99-2	420	*	330	ug/kg	12/24/93
Benzo(k)fluoranthene	207-08-9	ND		330	ug/kg	12/24/93
Benzo(g,h,i)perylene	191-24-2	ND		330	ug/kg	12/24/93
Benzo(a)pyrene	50-32-8	ND		330	ug/kg	12/24/93
Benzyl Alcohol	100-51-6	ND		660	ug/kg	12/24/93
Bis(2-chloroethoxy)methane	111-91-1	ND		330	ug/kg	12/24/93
Bis(2-choroethyl) Ether	111-44-4	ND		330	ug/kg	12/24/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND		330	ug/kg	12/24/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND		1700	ug/kg	12/24/93
4-Bromophenyl Phenyl Ether	101-55-3	ND		330	ug/kg	12/24/93
Butylbenzyl Phthalate	85-68-7	ND		330	ug/kg	12/24/93
4-Chloroaniline	106-47-8	ND		660	ug/kg	12/24/93
2-Chloronapththalene	91-58-7	ND		330	ug/kg	12/24/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND		330	ug/kg	12/24/93
Chrysene	218-01-9	440	*	330	ug/kg	12/24/93
Dibenzo(a,h)anthracene	53-70-3	ND		330	ug/kg	12/24/93
Dibenzofuran	132-64-9	ND		330	ug/kg	12/24/93
Di-n-butyl Phthalate	84-74-2	ND		330	ug/kg	12/24/93

HARZA KALDVEER

SAMPLE ID: SWB-7/1-1.5'
AEN LAB NO: 9312129-07A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/24/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/24/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/24/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/24/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/24/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/24/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/24/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/24/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/24/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/24/93
Fluoranthene	206-44-0	1,400 *	330	ug/kg	12/24/93
Fluorene	86-73-7	ND	330	ug/kg	12/24/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/24/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/24/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/24/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/24/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/24/93
Isophorone	78-59-1	ND	330	ug/kg	12/24/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/24/93
Naphthalene	91-20-3	ND	330	ug/kg	12/24/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/24/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/24/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/24/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/24/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/24/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/24/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/24/93
Phenanthrene	85-01-8	1,400 *	330	ug/kg	12/24/93
Pyrene	129-00-0	810 *	330	ug/kg	12/24/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/24/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/24/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/24/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/24/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/24/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/24/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/24/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/24/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/24/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/24/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/24/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/24/93
Phenol	108-95-2	ND	330	ug/kg	12/24/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/24/93

HARZA KALDVEER

SAMPLE ID: SWB-7/1-1.5'
AEN LAB NO: 9312129-07A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/24/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-7/5-5.5'
AEN LAB NO: 9312129-08A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	3 *	1	mg/kg	12/22/93
Selenium	EPA 7740	6 *	2	mg/kg	12/22/93
Cadmium	EPA 6010	0.9 *	0.1	mg/kg	12/18/93
Chromium	EPA 6010	3 *	1	mg/kg	12/18/93
Copper	EPA 6010	120 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	32,000 *	1	mg/kg	12/18/93
Nickel	EPA 6010	4 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.5 *	0.1	mg/kg	12/17/93
Zinc	EPA 6010	170 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	150 *	100	ug/kg	12/20/93
Benzene	71-43-2	ND	5	ug/kg	12/20/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/20/93
Bromoform	75-25-2	ND	5	ug/kg	12/20/93
Bromomethane	74-83-9	ND	10	ug/kg	12/20/93
2-Butanone	78-93-3	ND	100	ug/kg	12/20/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/20/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/20/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/20/93
Chloroethane	75-00-3	ND	10	ug/kg	12/20/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/20/93
Chloroform	67-66-3	ND	5	ug/kg	12/20/93
Chloromethane	74-87-3	ND	10	ug/kg	12/20/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/20/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/20/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/20/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/20/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/20/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/20/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/20/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-7/5-5.5'
AEN LAB NO: 9312129-08A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/20/93
Ethylbenzene	100-41-4	5 *	5	ug/kg	12/20/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/20/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/20/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/20/93
Styrene	100-42-5	ND	5	ug/kg	12/20/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/20/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/20/93
Toluene	108-88-3	ND	5	ug/kg	12/20/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/20/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/20/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/20/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/20/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/20/93
Xylenes, Total	1330-20-7	34 *	10	ug/kg	12/20/93
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/15/93
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	5,100 *	1700	ug/kg	12/24/93
Acenaphthylene	208-96-8	ND	1700	ug/kg	12/24/93
Anthracene	120-12-7	6,100 *	1700	ug/kg	12/24/93
Benzidine	92-87-5	ND	8000	ug/kg	12/24/93
Benzoic Acid	65-85-0	ND	8000	ug/kg	12/24/93
Benzo(a)anthracene	56-55-3	4,100 *	1700	ug/kg	12/24/93
Benzo(b)fluoranthene	205-99-2	4,100 *	1700	ug/kg	12/24/93
Benzo(k)fluoranthene	207-08-9	2,700 *	1700	ug/kg	12/24/93
Benzo(g,h,i)perylene	191-24-2	ND	1700	ug/kg	12/24/93
Benzo(a)pyrene	50-32-8	3,300 *	1700	ug/kg	12/24/93
Benzyl Alcohol	100-51-6	ND	3300	ug/kg	12/24/93
Bis(2-chloroethoxy)methane	111-91-1	ND	1700	ug/kg	12/24/93
Bis(2-choroethyl) Ether	111-44-4	ND	1700	ug/kg	12/24/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1700	ug/kg	12/24/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1700	ug/kg	12/24/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	1700	ug/kg	12/24/93
Butylbenzyl Phthalate	85-68-7	ND	1700	ug/kg	12/24/93
4-Chloroaniline	106-47-8	ND	3300	ug/kg	12/24/93
2-Chloronapththalene	91-58-7	ND	1700	ug/kg	12/24/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1700	ug/kg	12/24/93
Chrysene	218-01-9	4,400 *	1700	ug/kg	12/24/93
Dibenzo(a,h)anthracene	53-70-3	ND	1700	ug/kg	12/24/93
Dibenzofuran	132-64-9	ND	1700	ug/kg	12/24/93
Di-n-butyl Phthalate	84-74-2	ND	1700	ug/kg	12/24/93

HARZA KALDVEER

SAMPLE ID: SWB-7/5-5.5'
AEN LAB NO: 9312129-08A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	1700	ug/kg	12/24/93
1,3-Dichlorobenzene	541-73-1	ND	1700	ug/kg	12/24/93
1,4-Dichlorobenzene	106-46-7	ND	1700	ug/kg	12/24/93
3,3'-Dichlorobenzidine	91-94-1	ND	3300	ug/kg	12/24/93
Diethyl Phthalate	84-66-2	ND	1700	ug/kg	12/24/93
Dimethyl Phthalate	131-11-3	ND	1700	ug/kg	12/24/93
2,4-Dinitrotoluene	121-14-2	ND	1700	ug/kg	12/24/93
2,6-Dinitrotoluene	606-20-2	ND	1700	ug/kg	12/24/93
Di-n-octyl Phthalate	117-84-0	ND	1700	ug/kg	12/24/93
1,2-Diphenylhydrazine	122-66-7	ND	1700	ug/kg	12/24/93
Fluoranthene	206-44-0	14,000 *	1700	ug/kg	12/24/93
Fluorene	86-73-7	2,900 *	1700	ug/kg	12/24/93
Hexachlorobenzene	118-74-1	ND	1700	ug/kg	12/24/93
Hexachlorobutadiene	87-68-3	ND	1700	ug/kg	12/24/93
Hexachlorocyclopentadiene	77-47-4	ND	1700	ug/kg	12/24/93
Hexachloroethane	67-72-1	ND	1700	ug/kg	12/24/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1700	ug/kg	12/24/93
Isophorone	78-59-1	ND	1700	ug/kg	12/24/93
2-Methylnaphthalene	91-57-6	ND	1700	ug/kg	12/24/93
Naphthalene	91-20-3	1,700 *	1700	ug/kg	12/24/93
2-Nitroaniline	88-74-4	ND	8000	ug/kg	12/24/93
3-Nitroaniline	99-09-2	ND	8000	ug/kg	12/24/93
4-Nitroaniline	100-01-6	ND	8000	ug/kg	12/24/93
Nitrobenzene	98-95-3	ND	1700	ug/kg	12/24/93
N-Nitrosodimethylamine	62-75-9	ND	1700	ug/kg	12/24/93
N-Nitrosodiphenylamine	86-30-6	ND	1700	ug/kg	12/24/93
N-Nitrosodi-n-propylamine	621-64-7	ND	1700	ug/kg	12/24/93
Phenanthrene	85-01-8	14,000 *	1700	ug/kg	12/24/93
Pyrene	129-00-0	8,100 *	1700	ug/kg	12/24/93
1,2,4-Trichlorobenzene	120-82-1	ND	1700	ug/kg	12/24/93
4-Chloro-3-methylphenol	59-50-7	ND	1700	ug/kg	12/24/93
2-Chlorophenol	95-57-8	ND	1700	ug/kg	12/24/93
2,4-Dichlorophenol	120-83-2	ND	1700	ug/kg	12/24/93
2,4-Dimethylphenol	105-67-9	ND	1700	ug/kg	12/24/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	8000	ug/kg	12/24/93
2,4-Dinitrophenol	51-28-5	ND	8000	ug/kg	12/24/93
2-Methylphenol	95-48-7	ND	1700	ug/kg	12/24/93
4-Methylphenol	106-44-5	ND	1700	ug/kg	12/24/93
2-Nitrophenol	88-75-5	ND	1700	ug/kg	12/24/93
4-Nitrophenol	100-02-7	ND	8000	ug/kg	12/24/93
Pentachlorophenol	87-86-5	ND	8000	ug/kg	12/24/93
Phenol	108-95-2	ND	1700	ug/kg	12/24/93
2,4,5-Trichlorophenol	95-95-4	ND	1700	ug/kg	12/24/93

HARZA KALDVEER

SAMPLE ID: SWB-7/5-5.5'
AEN LAB NO: 9312129-08A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	1700	ug/kg	12/24/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-7/10-10.5'
AEN LAB NO: 9312129-09A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	01/10/94
Arsenic	EPA 7060	2 *	1	mg/kg	01/11/94
Selenium	EPA 7740	ND	2	mg/kg	01/11/94
Cadmium	EPA 6010	ND	0.1	mg/kg	01/11/94
Chromium	EPA 6010	31 *	1	mg/kg	01/11/94
Copper	EPA 6010	16 *	0.5	mg/kg	01/11/94
Lead	EPA 6010	1,100 *	1	mg/kg	01/11/94
Nickel	EPA 6010	34 *	1	mg/kg	01/11/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	01/11/94
Zinc	EPA 6010	40 *	1	mg/kg	01/11/94
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	01/04/94
Benzene	71-43-2	ND	5	ug/kg	01/04/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	01/04/94
Bromoform	75-25-2	ND	5	ug/kg	01/04/94
Bromomethane	74-83-9	ND	10	ug/kg	01/04/94
2-Butanone	78-93-3	ND	100	ug/kg	01/04/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	01/04/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	01/04/94
Chlorobenzene	108-90-7	ND	5	ug/kg	01/04/94
Chloroethane	75-00-3	ND	10	ug/kg	01/04/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	01/04/94
Chloroform	67-66-3	ND	5	ug/kg	01/04/94
Chloromethane	74-87-3	ND	10	ug/kg	01/04/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	01/04/94
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	01/04/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	01/04/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	01/04/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	01/04/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	01/04/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	01/04/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	01/04/94

HARZA KALDVEER

SAMPLE ID: SWB-7/10-10.5'
AEN LAB NO: 9312129-09A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	01/04/94
Ethylbenzene	100-41-4	ND	5	ug/kg	01/04/94
2-Hexanone	591-78-6	ND	50	ug/kg	01/04/94
Methylene Chloride	75-09-2	ND	10	ug/kg	01/04/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	01/04/94
Styrene	100-42-5	ND	5	ug/kg	01/04/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	01/04/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	01/04/94
Toluene	108-88-3	ND	5	ug/kg	01/04/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	01/04/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	01/04/94
Trichloroethene	79-01-6	ND	5	ug/kg	01/04/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	01/04/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	01/04/94
Xylenes, Total	1330-20-7	ND	10	ug/kg	01/04/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/23/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	01/10/94
Acenaphthylene	208-96-8	ND	330	ug/kg	01/10/94
Anthracene	120-12-7	ND	330	ug/kg	01/10/94
Benzidine	92-87-5	ND	1600	ug/kg	01/10/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	01/10/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	01/10/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	01/10/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	01/10/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	01/10/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	01/10/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	01/10/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	01/10/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	01/10/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	01/10/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	01/10/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	01/10/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	01/10/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	01/10/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	01/10/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	01/10/94
Chrysene	218-01-9	ND	330	ug/kg	01/10/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	01/10/94
Dibenzofuran	132-64-9	ND	330	ug/kg	01/10/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-7/10-10.5'
AEN LAB NO: 9312129-09A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	01/10/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	01/10/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	01/10/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	01/10/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	01/10/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	01/10/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	01/10/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	01/10/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	01/10/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	01/10/94
Fluoranthene	206-44-0	ND	330	ug/kg	01/10/94
Fluorene	86-73-7	ND	330	ug/kg	01/10/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	01/10/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	01/10/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	01/10/94
Hexachloroethane	67-72-1	ND	330	ug/kg	01/10/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	01/10/94
Isophorone	78-59-1	ND	330	ug/kg	01/10/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	01/10/94
Naphthalene	91-20-3	ND	330	ug/kg	01/10/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	01/10/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	01/10/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	01/10/94
Nitrobenzene	98-95-3	ND	330	ug/kg	01/10/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	01/10/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	01/10/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	01/10/94
Phenanthrene	85-01-8	ND	330	ug/kg	01/10/94
Pyrene	129-00-0	ND	330	ug/kg	01/10/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	01/10/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	01/10/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	01/10/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	01/10/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	01/10/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	01/10/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	01/10/94
2-Methylphenol	95-48-7	ND	330	ug/kg	01/10/94
4-Methylphenol	106-44-5	ND	330	ug/kg	01/10/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	01/10/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	01/10/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	01/10/94
Phenol	108-95-2	ND	330	ug/kg	01/10/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-7/10-10.5'
AEN LAB NO: 9312129-09A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	01/10/94

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-7/15-15.5'
AEN LAB NO: 9312129-10A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	2 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	55 *	1	mg/kg	12/18/93
Copper	EPA 6010	23 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	110 *	1	mg/kg	12/18/93
Nickel	EPA 6010	73 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.1 *	0.1	mg/kg	12/17/93
Zinc	EPA 6010	35 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-7/15-15.5'
AEN LAB NO: 9312129-10A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-7/15-15.5'
AEN LAB NO: 9312129-10A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-7/15-15.5'
AEN LAB NO: 9312129-10A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-5/0.5-1'
AEN LAB NO: 9312129-11A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	6 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	0.1 *	0.1	mg/kg	12/18/93
Chromium	EPA 6010	40 *	1	mg/kg	12/18/93
Copper	EPA 6010	23 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	14 *	1	mg/kg	12/18/93
Nickel	EPA 6010	63 *	1	mg/kg	12/18/93
Silver	EPA 6010	0.1 *	0.1	mg/kg	12/17/93
Zinc	EPA 6010	32 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-5/0.5-1'
AEN LAB NO: 9312129-11A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-5/0.5-1'
AEN LAB NO: 9312129-11A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-5/0.5-1'
AEN LAB NO: 9312129-11A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-5/5-5.5'
AEN LAB NO: 9312129-12A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	01/07/94
Arsenic	EPA 7060	9 *	1	mg/kg	01/10/94
Selenium	EPA 7740	ND	2	mg/Kg	01/10/94
Cadmium	EPA 6010	5.9 *	0.1	mg/kg	01/10/94
Chromium	EPA 6010	56 *	1	mg/kg	01/10/94
Copper	EPA 6010	79 *	0.5	mg/kg	01/10/94
Lead	EPA 6010	320 *	1	mg/kg	01/10/94
Nickel	EPA 6010	75 *	1	mg/kg	01/10/94
Silver	EPA 6010	0.3 *	0.1	mg/kg	01/10/94
Zinc	EPA 6010	140 *	1	mg/kg	01/10/94
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	01/10/94
Benzene	71-43-2	ND	5	ug/kg	01/10/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	01/10/94
Bromoform	75-25-2	ND	5	ug/kg	01/10/94
Bromomethane	74-83-9	ND	10	ug/kg	01/10/94
2-Butanone	78-93-3	ND	100	ug/kg	01/10/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	01/10/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	01/10/94
Chlorobenzene	108-90-7	ND	5	ug/kg	01/10/94
Chloroethane	75-00-3	ND	10	ug/kg	01/10/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	01/10/94
Chloroform	67-66-3	ND	5	ug/kg	01/10/94
Chloromethane	74-87-3	ND	10	ug/kg	01/10/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	01/10/94
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	01/10/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	01/10/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	01/10/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	01/10/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	01/10/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	01/10/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-5/5-5.5'
AEN LAB NO: 9312129-12A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	01/10/94
Ethylbenzene	100-41-4	ND	5	ug/kg	01/10/94
2-Hexanone	591-78-6	ND	50	ug/kg	01/10/94
Methylene Chloride	75-09-2	ND	5	ug/kg	01/10/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	01/10/94
Styrene	100-42-5	ND	5	ug/kg	01/10/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	01/10/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	01/10/94
Toluene	108-88-3	ND	5	ug/kg	01/10/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	01/10/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	01/10/94
Trichloroethene	79-01-6	ND	5	ug/kg	01/10/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	01/10/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	01/10/94
Xylenes, Total	1330-20-7	ND	10	ug/kg	01/10/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/23/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	01/10/94
Acenaphthylene	208-96-8	ND	330	ug/kg	01/10/94
Anthracene	120-12-7	ND	330	ug/kg	01/10/94
Benzidine	92-87-5	ND	1600	ug/kg	01/10/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	01/10/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	01/10/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	01/10/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	01/10/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	01/10/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	01/10/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	01/10/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	01/10/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	01/10/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	01/10/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	01/10/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	01/10/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	01/10/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	01/10/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	01/10/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	01/10/94
Chrysene	218-01-9	ND	330	ug/kg	01/10/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	01/10/94
Dibenzofuran	132-64-9	ND	330	ug/kg	01/10/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-5/5-5.5'
AEN LAB NO: 9312129-12A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	01/10/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	01/10/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	01/10/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	01/10/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	01/10/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	01/10/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	01/10/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	01/10/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	01/10/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	01/10/94
Fluoranthene	206-44-0	ND	330	ug/kg	01/10/94
Fluorene	86-73-7	ND	330	ug/kg	01/10/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	01/10/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	01/10/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	01/10/94
Hexachloroethane	67-72-1	ND	330	ug/kg	01/10/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	01/10/94
Isophorone	78-59-1	ND	330	ug/kg	01/10/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	01/10/94
Naphthalene	91-20-3	ND	330	ug/kg	01/10/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	01/10/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	01/10/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	01/10/94
Nitrobenzene	98-95-3	ND	330	ug/kg	01/10/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	01/10/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	01/10/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	01/10/94
Phenanthrene	85-01-8	ND	330	ug/kg	01/10/94
Pyrene	129-00-0	ND	330	ug/kg	01/10/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	01/10/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	01/10/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	01/10/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	01/10/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	01/10/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	01/10/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	01/10/94
2-Methylphenol	95-48-7	ND	330	ug/kg	01/10/94
4-Methylphenol	106-44-5	ND	330	ug/kg	01/10/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	01/10/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	01/10/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	01/10/94
Phenol	108-95-2	ND	330	ug/kg	01/10/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-5/5-5.5'
AEN LAB NO: 9312129-12A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	01/10/94

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-5/10-10.5'
AEN LAB NO: 9312129-13A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
VOCs in Soil	**EPA 8240**				
Acetone	67-64-1	ND	100	ug/kg	01/10/94
Benzene	71-43-2	ND	5	ug/kg	01/10/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	01/10/94
Bromoform	75-25-2	ND	5	ug/kg	01/10/94
Bromomethane	74-83-9	ND	10	ug/kg	01/10/94
2-Butanone	78-93-3	ND	100	ug/kg	01/10/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	01/10/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	01/10/94
Chlorobenzene	108-90-7	ND	5	ug/kg	01/10/94
Chloroethane	75-00-3	ND	10	ug/kg	01/10/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	01/10/94
Chloroform	67-66-3	ND	5	ug/kg	01/10/94
Chloromethane	74-87-3	ND	10	ug/kg	01/10/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	01/10/94
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	01/10/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	01/10/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	01/10/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	01/10/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	01/10/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	01/10/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	01/10/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	01/10/94
Ethylbenzene	100-41-4	ND	5	ug/kg	01/10/94
2-Hexanone	591-78-6	ND	50	ug/kg	01/10/94
Methylene Chloride	75-09-2	ND	5	ug/kg	01/10/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	01/10/94
Styrene	100-42-5	ND	5	ug/kg	01/10/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	01/10/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	01/10/94
Toluene	108-88-3	ND	5	ug/kg	01/10/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	01/10/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	01/10/94
Trichloroethene	79-01-6	ND	5	ug/kg	01/10/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	01/10/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	01/10/94
Xylenes, Total	1330-20-7	ND	10	ug/kg	01/10/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/23/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-5/10-10.5'
AEN LAB NO: 9312129-13A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Acenaphthylene	208-96-8	ND	330	ug/kg	01/10/94
Anthracene	120-12-7	ND	330	ug/kg	01/10/94
Benzidine	92-87-5	ND	1600	ug/kg	01/10/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	01/10/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	01/10/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	01/10/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	01/10/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	01/10/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	01/10/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	01/10/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	01/10/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	01/10/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	01/10/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	01/10/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	01/10/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	01/10/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	01/10/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	01/10/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	01/10/94
Chrysene	218-01-9	ND	330	ug/kg	01/10/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	01/10/94
Dibenzofuran	132-64-9	ND	330	ug/kg	01/10/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	01/10/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	01/10/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	01/10/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	01/10/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	01/10/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	01/10/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	01/10/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	01/10/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	01/10/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	01/10/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	01/10/94
Fluoranthene	206-44-0	ND	330	ug/kg	01/10/94
Fluorene	86-73-7	ND	330	ug/kg	01/10/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	01/10/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	01/10/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	01/10/94
Hexachloroethane	67-72-1	ND	330	ug/kg	01/10/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	01/10/94
Isophorone	78-59-1	ND	330	ug/kg	01/10/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	01/10/94
Naphthalene	91-20-3	ND	330	ug/kg	01/10/94

HARZA KALDVEER

SAMPLE ID: SWB-5/10-10.5'
AEN LAB NO: 9312129-13A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2-Nitroaniline	88-74-4	ND	1600	ug/kg	01/10/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	01/10/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	01/10/94
Nitrobenzene	98-95-3	ND	330	ug/kg	01/10/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	01/10/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	01/10/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	01/10/94
Phenanthrene	85-01-8	ND	330	ug/kg	01/10/94
Pyrene	129-00-0	ND	330	ug/kg	01/10/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	01/10/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	01/10/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	01/10/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	01/10/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	01/10/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	01/10/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	01/10/94
2-Methylphenol	95-48-7	ND	330	ug/kg	01/10/94
4-Methylphenol	106-44-5	ND	330	ug/kg	01/10/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	01/10/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	01/10/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	01/10/94
Phenol	108-95-2	ND	330	ug/kg	01/10/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	01/10/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	01/10/94

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-11/0.5-1'
AEN LAB NO: 9312129-14A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	9 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	20 *	1	mg/kg	12/18/93
Copper	EPA 6010	35 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	40 *	1	mg/kg	12/18/93
Nickel	EPA 6010	67 *	1	mg/kg	12/17/93
Silver	EPA 6010	ND	0.1	mg/kg	12/17/93
Zinc	EPA 6010	63 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-11/0.5-1'
AEN LAB NO: 9312129-14A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/28/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/28/93
Anthracene	120-12-7	ND	330	ug/kg	12/28/93
Benzidine	92-87-5	ND	1600	ug/kg	12/28/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/28/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/28/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/28/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/28/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/28/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/28/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/28/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/28/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/28/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/28/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/28/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/28/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/28/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/28/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/28/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/28/93
Chrysene	218-01-9	ND	330	ug/kg	12/28/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/28/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/28/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/28/93

HARZA KALDVEER

SAMPLE ID: SWB-11/0.5-1'
AEN LAB NO: 9312129-14A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/28/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/28/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/28/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/28/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/28/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/28/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/28/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/28/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/28/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/28/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/28/93
Fluorene	86-73-7	ND	330	ug/kg	12/28/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/28/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/28/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/28/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/28/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/28/93
Isophorone	78-59-1	ND	330	ug/kg	12/28/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/28/93
Naphthalene	91-20-3	ND	330	ug/kg	12/28/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/28/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/28/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/28/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/28/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/28/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/28/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/28/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/28/93
Pyrene	129-00-0	ND	330	ug/kg	12/28/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/28/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/28/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/28/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/28/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/28/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/28/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/28/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/28/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/28/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/28/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/28/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/28/93
Phenol	108-95-2	ND	330	ug/kg	12/28/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/28/93

HARZA KALDVEER

SAMPLE ID: SWB-11/0.5-1'
AEN LAB NO: 9312129-14A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/28/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-11/5-5.5'
AEN LAB NO: 9312129-15A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/17/93
Arsenic	EPA 7060	9 *	1	mg/kg	12/22/93
Selenium	EPA 7740	ND	2	mg/kg	12/22/93
Cadmium	EPA 6010	ND	0.1	mg/kg	12/18/93
Chromium	EPA 6010	38 *	1	mg/kg	12/18/93
Copper	EPA 6010	31 *	0.5	mg/kg	12/18/93
Lead	EPA 6010	43 *	1	mg/kg	12/18/93
Nickel	EPA 6010	49 *	1	mg/kg	12/18/93
Silver	EPA 6010	ND	0.1	mg/kg	12/17/93
Zinc	EPA 6010	61 *	1	mg/kg	12/18/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/19/93
Benzene	71-43-2	ND	5	ug/kg	12/19/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/19/93
Bromoform	75-25-2	ND	5	ug/kg	12/19/93
Bromomethane	74-83-9	ND	10	ug/kg	12/19/93
2-Butanone	78-93-3	ND	100	ug/kg	12/19/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/19/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/19/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/19/93
Chloroethane	75-00-3	ND	10	ug/kg	12/19/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/19/93
Chloroform	67-66-3	ND	5	ug/kg	12/19/93
Chloromethane	74-87-3	ND	10	ug/kg	12/19/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/19/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/19/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/19/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/19/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/19/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/19/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/19/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/19/93

HARZA KALDVEER

SAMPLE ID: SWB-11/5-5.5'
AEN LAB NO: 9312129-15A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/19/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/19/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/19/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/19/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/19/93
Styrene	100-42-5	ND	5	ug/kg	12/19/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/19/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/19/93
Toluene	108-88-3	ND	5	ug/kg	12/19/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/19/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/19/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/19/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/19/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/19/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/19/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/15/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/23/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/23/93
Anthracene	120-12-7	ND	330	ug/kg	12/23/93
Benzidine	92-87-5	ND	1600	ug/kg	12/23/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/23/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/23/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/23/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/23/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/23/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/23/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/23/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/23/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/23/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/23/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/23/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/23/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/23/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/23/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/23/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/23/93
Chrysene	218-01-9	ND	330	ug/kg	12/23/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/23/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/23/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-11/5-5.5'
AEN LAB NO: 9312129-15A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/23/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/23/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/23/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/23/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/23/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/23/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/23/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/23/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/23/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/23/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/23/93
Fluorene	86-73-7	ND	330	ug/kg	12/23/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/23/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/23/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/23/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/23/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/23/93
Isophorone	78-59-1	ND	330	ug/kg	12/23/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/23/93
Naphthalene	91-20-3	ND	330	ug/kg	12/23/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/23/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/23/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/23/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/23/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/23/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/23/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/23/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/23/93
Pyrene	129-00-0	ND	330	ug/kg	12/23/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/23/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/23/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/23/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/23/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/23/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/23/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/23/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/23/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/23/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/23/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/23/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/23/93
Phenol	108-95-2	ND	330	ug/kg	12/23/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/23/93

HARZA KALDVEER

SAMPLE ID: SWB-11/5-5.5'
AEN LAB NO: 9312129-15A
AEN WORK ORDER: 9312129
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 01/17/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/23/93

ND = Not detected
* = Indicates value above reporting limit

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WATER DATA

INCLUDED IN APPENDIX B

QUALITY CONTROL DATA

INSTRUMENT: 12 AEN JOB NO: 9312129

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloro-ethane-d_4	Toluene-d_8	p-Bromofluoro-benzene
12/19/93	SWB-3/0.5-1'	01	102	114	100
12/19/93	SWB-3/5-5.5'	02	97	101	94
12/20/93	SWB-4/0.5-1'	04	138	110	102
12/20/93	SWB-4/5.0-5.5'	05	90	97	100
12/19/93	SWB-7/1-1.5'	07	99	100	91
12/20/93	SWB-7/5-5.5'	08	99	105	91
01/04/94	SWB-7/10-10.5'	09	100	101	93
12/19/93	SWB-7/15-15.5'	10	95	100	99
12/20/93	SWB-5/0.5-1'	11	94	105	100
01/10/94	SWB-5/5-5.5'	12	91	118	85
01/10/94	SWB-5/10-10.5'	13	105	114	100
12/19/93	SWB-11/0.5-1'	14	105	98	96
12/19/93	SWB-11/5-5.5'	15	103	89	111

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d_4	(68-141)
Toluene-d_8	(89-119)
p-Bromofluorobenzene	(85-112)

QUALITY CONTROL DATA

DATE ANALYZED: 12/19/93
SAMPLE SPIKED: 9312129-01
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	98	2
Trichloroethene	50.0	87	7
Benzene	50.0	105	<1
Toluene	50.0	96	3
Chlorobenzene	50.0	100	3

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE ANALYZED: 01/04/94
SAMPLE SPIKED: 9312129-09
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	119	<1
Trichloroethene	50.0	97	1
Benzene	50.0	102	4
Toluene	50.0	96	3
Chlorobenzene	50.0	103	10

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

INSTRUMENT: 12 AEN JOB NO: 9312129

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloro-ethane-d_4	Toluene-d_8	p-Bromofluoro-benzene
12/18/93	SWB-3	18	96	91	104
12/18/93	SWB-4	19	100	100	104
12/18/93	SWB-5	20	98	91	102
12/18/93	SWB-7	21	107	96	100
12/18/93	SWB-11	22	96	101	104

CURRENT QC LIMITS (Revised 11/21/93)

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d4	(77-123)
Toluene-d8	(90-108)
p-Bromofluorobenzene	(89-109)

QUALITY CONTROL DATA

DATE ANALYZED: 12/18/93
SAMPLE SPIKED: 9312129-18
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	103	2
Trichloroethene	50.0	100	5
Benzene	50.0	97	7
Toluene	50.0	98	8
Chlorobenzene	50.0	96	4

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(81-123)	12
Trichloroethene	(87-112)	9
Benzene	(92-116)	12
Toluene	(91-116)	12
Chlorobenzene	(92-113)	10

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/13/93 AEN JOB NO: 9312129

CLIENT PROJ. ID: KE1495-1A-2112 INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Sample Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/23/93	SWB-3/0.5-1'	01	61	76	51	60	59	62
12/23/93	SWB-3/5-5.5'	02	58	75	51	51	58	58
12/23/93	SWB-4/0.5-1'	04	60	78	50	61	55	64
12/23/93	SWB-4/5.0-5-5'	05	53	75	49	49	47	54
12/24/93	SWB-7/1-1.5'	07	68	95	57	78	69	63
12/24/93	SWB-7/5-5.5'	08	52	91	64	44	50	52
01/10/94	SWB-7/10.10.5'	09	62	77	80	71	57	69
12/23/93	SWB-7/15-15.5'	10	58	81	55	48	58	60
12/23/93	SWB-5/0.5-1'	11	64	78	49	63	66	60
01/10/94	SWB-5/5-5.5'	12	77	84	94	71	71	92
01/10/94	SWB-5/10-10.5'	13	77	93	88	93	79	76
12/28/93	SWB-11/0.5-1'	14	69	99	68	85	75	63
12/23/93	SWB-11/5-5.5'	15	51	66	39	52	56	40

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d_{14}	(18-137)
Phenol-d_5	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

QUALITY CONTROL DATA

DATE EXTRACTED: 12/15/93
DATE ANALYZED: 12/24/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: 9312129-10
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	57	2
2-Chlorophenol	3330	66	6
1,4-Dichlorobenzene	3400	57	5
N-Nitroso-di-n-propylamine	3320	64	14
1,2,4-Trichlorobenzene	3330	58	10
4-Chloro-3-methylphenol	3270	79	28
Acenaphthene	3330	70	16
4-Nitrophenol	3300	80	25
2,4-Dinitrotoluene	3330	72	8
Pentachlorophenol	3380	57	3
Pyrene	3320	44	4

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/23/93
DATE ANALYZED: 01/11/94
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: 9312129-09
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	87	20
2-Chlorophenol	3330	85	34
1,4-Dichlorobenzene	3400	74	17
N-Nitroso-di-n-propylamine	3320	87	19
1,2,4-Trichlorobenzene	3330	76	20
4-Chloro-3-methylphenol	3270	101	4
Acenaphthene	3330	89	4
4-Nitrophenol	3300	86	9
2,4-Dinitrotoluene	3330	82	2
Pentachlorophenol	3380	96	21
Pyrene	3320	75	5

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/15/93 AEN JOB NO: 9312129

CLIENT PROJ. ID: K1495-1A-2112 INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Sample Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/22/93	SWB-3	18A	69	76	100	93	72	115
12/23/93	SWB-4	19A	82	86	124	75	56	62
12/22/93	SWB-5	20A	85	82	112	87	74	113
12/22/93	SWB-7	21A	79	82	106	82	68	123
12/22/93	SWB-11	22A	78	71	86	86	68	128

CURRENT QC LIMITS (REVISED 01/08/92)

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(47-104)
2-Fluorobiphenyl	(49-106)
Terphenyl-d_{14}	(36-138)
Phenol-d_5	(46-105)
2-Fluorophenol	(40- 97)
2,4,6-Tribromophenol	(37-145)

QUALITY CONTROL DATA

DATE EXTRACTED: 12/15/93
DATE ANALYZED: 12/21/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: 11

METHOD SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
Phenol	200	83	2
2-Chlorophenol	200	99	4
1,4-Dichlorobenzene	204	70	6
N-Nitroso-di-n-propylamine	199	90	7
1,2,4-Trichlorobenzene	200	72	1
4-Chloro-3-methylphenol	196	97	<1
Acenaphthene	200	82	5
4-Nitrophenol	198	79	6
2,4-Dinitrotoluene	200	80	1
Pentachlorophenol	203	78	14
Pyrene	199	47	7

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(12-110)	42
2-Chlorophenol	(27-123)	40
1,4-Dichlorobenzene	(36- 97)	28
4-Nitroso-di-n-propylamine	(41-116)	38
1,2,4-Trichlorobenzene	(39- 98)	28
4-Chloro-3-methylphenol	(23- 97)	42
Acenaphthene	(46-118)	31
4-Nitrophenol	(10- 80)	50
2,4-Dinitrotoluene	(24- 96)	38
Pentachlorophenol	(9-103)	50
Pyrene	(26-127)	31

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: SAND
DIGESTION DATE: 12/17/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/kg)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	51	5	50-150	20
As, Arsenic	4000/7060	20	100	2	79-122	10
Cd, Cadmium	ICP/6010	10	91	4	75-125	20
Cr, Chromium	ICP/6010	50	94	3	75-125	20
Cu, Copper	ICP/6010	50	97	3	75-125	20
Ni, Nickel	ICP/6010	50	95	3	75-125	20
Pb, Lead	ICP/6010	50	96	3	75-125	20
Se, Selenium	4000/7740	40	95	3	73-126	14
Zn, Zinc	ICP/6010	50	91	3	75-125	20

RPD = Relative Percent Difference

Daily method blanks for all associated runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: SAND
DIGESTION DATE: 01/07/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/kg)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	62	1	50-150	20
As, Arsenic	4000/7060	10	96	4	79-122	10
Cd, Cadmium	ICP/6010	10	92	1	75-125	20
Cr, Chromium	ICP/6010	50	98	1	75-125	20
Cu, Copper	ICP/6010	50	101	<1	75-125	20
Ni, Nickel	ICP/6010	50	98	1	75-125	20
Pb, Lead	ICP/6010	50	97	<1	75-125	20
Se, Selenium	4000/7740	20	92	2	73-126	14
Zn, Zinc	ICP/6010	50	96	<1	75-125	20

RPD = Relative Percent Difference
< = Less Than

Daily method blanks for all associated runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312129
SAMPLE SPIKED: SAND
DIGESTION DATE: 01/10/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/kg)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	54	1	50-150	20
As, Arsenic	4000/7060	20	107	<1	79-122	10
Cd, Cadmium	ICP/6010	10	85	2	75-125	20
Cr, Chromium	ICP/6010	50	94	<1	75-125	20
Cu, Copper	ICP/6010	50	94	1	75-125	20
Ni, Nickel	ICP/6010	50	96	<1	75-125	20
Pb, Lead	ICP/6010	50	96	1	75-125	20
Se, Selenium	4000/7740	40	99	7	73-126	14
Zn, Zinc	ICP/6010	50	92	2	75-125	20

RPD = Relative Percent Difference

Daily method blanks for all associated runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312129

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 12/15/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.1	96	5	66-127	11
As, Arsenic	4000/7060	0.04	96	1	90-115	12
Cd, Cadmium	ICP/6010	0.05	101	9	71-134	12
Cr, Chromium	ICP/6010	0.2	100	6	85-114	6
Cu, Copper	ICP/6010	0.25	97	5	86-112	5
Ni, Nickel	ICP/6010	0.5	100	4	87-114	5
Pb, Lead	ICP/6010	0.5	95	4	87-115	6
Se, Selenium	4000/7740	0.08	95	3	76-131	14
Zn, Zinc	ICP/6010	0.5	98	4	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312129

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 01/05-10/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.25	83	4	66-127	11
As, Arsenic	4000/7060	0.04	95	9	90-115	12
Cd, Cadmium	ICP/6010	0.25	103	5	71-134	12
Cr, Chromium	ICP/6010	0.2	103	3	85-114	6
Cu, Copper	ICP/6010	0.25	103	3	86-112	5
Ni, Nickel	ICP/6010	0.5	102	3	87-114	5
Pb, Lead	ICP/6010	0.5	101	6	87-115	6
Se, Selenium	4000/7740	0.08	95	1	76-131	14
Zn, Zinc	ICP/6010	0.5	108	2	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-4, S (soils)
C-1, S-2
R-1, S-H
R-3, S-3

Lab Job # 9312129

CHAIN-OF-CUSTODY RECORD

Project Number: KE1495-1A-2112

Project Name: Fuller O'Brien

Location: So. S.F.

Sampler's Name (printed): TACIA MILLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals -				Remarks
SWB-3/0.5-1'	01A (2)	12/9/93	X		1"x6" Stainless-2			X	X				X				12/10 - Per Steve Henshaw add
SWB-3/5-5.5'	02A (2)							X	X				X				Cu to all metals analysis.
SWB-3/10-10.5	03A (2)																Hold UKPS
SWB-4/0.5-1'	04A (2)							X	X				X				
SWB-4/5-5.5'	05A (2)							X	X				X				
SWB-4/10-10.5	06A (2)																Hold
SWB-5/0.5-1'	~~07A~~ 11A				2x6" Liner			X	X				X				
SWB-5/5-5.5'	~~08A~~ 12A							X	X				X				
SWB-5/10-10.5'	~~09A~~ 13A							✓									Hold 12/23 Per S Henshaw,
SWB-7/1-1.5'	~~10A~~ 07A							X	X				X				pls analyze sample SWB5/10-10.5'
SWB-7/5-5.5'	~~11A~~ 08A							X	X				X				Per 8240 UKPS
SWB-7/10-10.5'	~~12A~~ 09A																Hold
SWB-7/15-15.5'	~~13A~~ 10A																Hold
SWB-11/0.5-1'	14A							X	X				X				
SWB-11/5-5.5'	15A							X	X				X				~~1-5-94 per client send sample SWB-5/5-5.5 to Jenkins, Sanders Assoc. [illegible]~~

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	12/9/93 530	Ron Stallup
Ron Stallup	12/9/93 645	
		Received for Laboratory by: (Signature) Denise Harrington

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks: Metals for As, Cd, Cr, Pb, Ni, Se, Ag, Zn, Cu

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: [illegible]

HARZA KALDVEER
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: KE1495-1A-2112
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 01/18/94

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93

ADDITIONAL ANALYSIS
REQUESTED: 12/10-22/93-
01/04/94

AEN JOB NO: 9312104

PROJECT SUMMARY:

On December 8, 1993, this laboratory received four (4) soil samples and one (1) water sample.

Client requested two (2) soil samples and the water sample be analyzed for inorganic and organic parameters. Two (2) soil samples and sample fraction for filtered metals were placed on hold. On December 10, 1993, client requested additional analysis on samples for Copper. On December 22, 1993, client requested samples SWB-8/10-10.5' and SWB-8/15-15.5' be taken off hold and analyzed by EPA Method 8270. On January 4, 1994, client requested sample SWB-8 for filtered metals be taken off hold. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

Sample SWB-B/5-5.5'(9312104-02) was analyzed dilute due to high levels of non-target compounds, and reporting limits were adjusted accordingly. Surrogate recoveries for this sample cannot be reported due to this dilution.

All other laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

Results FAXed 12/20/93-01/13/94

HARZA KALDVEER

SAMPLE ID: SWB-8/0.5-1'
AEN LAB NO: 9312104-01A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	6 *	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	0.2 *	0.1	mg/kg	12/16/93
Chromium	EPA 6010	37 *	1	mg/kg	12/16/93
Copper	EPA 6010	48 *	1	mg/kg	12/16/93
Lead	EPA 6010	840 *	1	mg/kg	12/16/93
Nickel	EPA 6010	190 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.2 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	110 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/14/93
Benzene	71-43-2	ND	5	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/14/93
Bromoform	75-25-2	ND	5	ug/kg	12/14/93
Bromomethane	74-83-9	ND	10	ug/kg	12/14/93
2-Butanone	78-93-3	ND	100	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	5	ug/kg	12/14/93
Chloroethane	75-00-3	ND	10	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/14/93
Chloroform	67-66-3	ND	5	ug/kg	12/14/93
Chloromethane	74-87-3	ND	10	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	5	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-8/0.5-1'
AEN LAB NO: 9312104-01A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	5	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	50	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	5	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/14/93
Styrene	100-42-5	ND	5	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/14/93
Toluene	108-88-3	ND	5	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	5	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	50	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	10	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	10	ug/kg	12/14/93
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	12/13/93
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	12/20/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/20/93
Anthracene	120-12-7	ND	330	ug/kg	12/20/93
Benzidine	92-87-5	ND	1600	ug/kg	12/20/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/20/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/20/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/20/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/20/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/20/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/20/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/20/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/20/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/20/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/20/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/20/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/20/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/20/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/20/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/20/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/20/93
Chrysene	218-01-9	ND	330	ug/kg	12/20/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/20/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/20/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-8/0.5-1'
AEN LAB NO: 9312104-01A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/20/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/20/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/20/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/20/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/20/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/20/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/20/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/20/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/20/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/20/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/20/93
Fluorene	86-73-7	ND	330	ug/kg	12/20/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/20/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/20/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/20/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/20/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/20/93
Isophorone	78-59-1	ND	330	ug/kg	12/20/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/20/93
Naphthalene	91-20-3	ND	330	ug/kg	12/20/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/20/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/20/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/20/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/20/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/20/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/20/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/20/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/20/93
Pyrene	129-00-0	ND	330	ug/kg	12/20/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/20/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/20/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/20/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/20/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/20/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/20/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/20/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/20/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/20/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/20/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/20/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/20/93
Phenol	108-95-2	ND	330	ug/kg	12/20/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-8/0.5-1'
AEN LAB NO: 9312104-01A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/20/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-8/5-5.5'
AEN LAB NO: 9312104-02A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	12/14/93
Arsenic	EPA 7060	9 *	1	mg/kg	12/16/93
Selenium	EPA 7740	ND	2	mg/kg	12/16/93
Cadmium	EPA 6010	0.6 *	0.1	mg/kg	12/16/93
Chromium	EPA 6010	28 *	1	mg/kg	12/16/93
Copper	EPA 6010	37 *	1	mg/kg	12/16/93
Lead	EPA 6010	21,000 *	1	mg/kg	12/17/93
Nickel	EPA 6010	130 *	1	mg/kg	12/16/93
Silver	EPA 6010	0.3 *	0.1	mg/kg	12/16/93
Zinc	EPA 6010	160 *	1	mg/kg	12/16/93
VOCs in Soil	EPA 8240				
Acetone	67-64-1	ND	500	ug/kg	12/14/93
Benzene	71-43-2	ND	30	ug/kg	12/14/93
Bromodichloromethane	75-27-4	ND	30	ug/kg	12/14/93
Bromoform	75-25-2	ND	30	ug/kg	12/14/93
Bromomethane	74-83-9	ND	50	ug/kg	12/14/93
2-Butanone	78-93-3	ND	500	ug/kg	12/14/93
Carbon Disulfide	75-15-0	ND	50	ug/kg	12/14/93
Carbon Tetrachloride	56-23-5	ND	30	ug/kg	12/14/93
Chlorobenzene	108-90-7	ND	30	ug/kg	12/14/93
Chloroethane	75-00-3	ND	50	ug/kg	12/14/93
2-Chloroethyl Vinyl Ether	110-75-8	ND	50	ug/kg	12/14/93
Chloroform	67-66-3	ND	30	ug/kg	12/14/93
Chloromethane	74-87-3	ND	50	ug/kg	12/14/93
Dibromochloromethane	124-48-1	ND	30	ug/kg	12/14/93
1,1-Dichloroethane	75-34-3	ND	30	ug/kg	12/14/93
1,2-Dichloroethane	107-06-2	ND	30	ug/kg	12/14/93
1,1-Dichloroethene	75-35-4	ND	30	ug/kg	12/14/93
cis-1,2-Dichloroethene	156-59-2	ND	30	ug/kg	12/14/93
trans-1,2-Dichloroethene	156-60-5	ND	30	ug/kg	12/14/93
1,2-Dichloropropane	78-87-5	ND	30	ug/kg	12/14/93
cis-1,3-Dichloropropene	10061-01-5	ND	30	ug/kg	12/14/93

HARZA KALDVEER

SAMPLE ID: SWB-8/5-5.5'
AEN LAB NO: 9312104-02A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
trans-1,3-Dichloropropene	10061-02-6	ND	30	ug/kg	12/14/93
Ethylbenzene	100-41-4	ND	30	ug/kg	12/14/93
2-Hexanone	591-78-6	ND	300	ug/kg	12/14/93
Methylene Chloride	75-09-2	ND	30	ug/kg	12/14/93
4-Methyl-2-pentanone	108-10-1	ND	300	ug/kg	12/14/93
Styrene	100-42-5	ND	30	ug/kg	12/14/93
1,1,2,2-Tetrachloroethane	79-34-5	ND	30	ug/kg	12/14/93
Tetrachloroethene	127-18-4	ND	30	ug/kg	12/14/93
Toluene	108-88-3	ND	30	ug/kg	12/14/93
1,1,1-Trichloroethane	71-55-6	ND	30	ug/kg	12/14/93
1,1,2-Trichloroethane	79-00-5	ND	30	ug/kg	12/14/93
Trichloroethene	79-01-6	ND	30	ug/kg	12/14/93
Vinyl Acetate	108-05-4	ND	300	ug/kg	12/14/93
Vinyl Chloride	75-01-4	ND	50	ug/kg	12/14/93
Xylenes, Total	1330-20-7	ND	50	ug/kg	12/14/93
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/13/93
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	12/20/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/20/93
Anthracene	120-12-7	ND	330	ug/kg	12/20/93
Benzidine	92-87-5	ND	1600	ug/kg	12/20/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/20/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/20/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/20/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/20/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/20/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/20/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/20/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/20/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/20/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/20/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/20/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/20/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/20/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/20/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/20/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/20/93
Chrysene	218-01-9	ND	330	ug/kg	12/20/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/20/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/20/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-8/5-5.5'
AEN LAB NO: 9312104-02A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/20/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/20/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/20/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/20/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/20/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/20/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/20/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/20/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/20/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/20/93
Fluoranthene	206-44-0	440 *	330	ug/kg	12/20/93
Fluorene	86-73-7	ND	330	ug/kg	12/20/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/20/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/20/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/20/93
Hexachloroethane	67-72-1	ND	330	ug/kg	12/20/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/20/93
Isophorone	78-59-1	ND	330	ug/kg	12/20/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/20/93
Naphthalene	91-20-3	ND	330	ug/kg	12/20/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/20/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/20/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/20/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/20/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/20/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/20/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/20/93
Phenanthrene	85-01-8	ND	330	ug/kg	12/20/93
Pyrene	129-00-0	ND	330	ug/kg	12/20/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/20/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/20/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/20/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/20/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/20/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/20/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/20/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/20/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/20/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/20/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/20/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/20/93
Phenol	108-95-2	ND	330	ug/kg	12/20/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/20/93

HARZA KALDVEER

SAMPLE ID: SWB-8/5-5.5'
AEN LAB NO: 9312104-02A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/20/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-8/10-10.5'
AEN LAB NO: 9312104-03A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/22/93
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	12/30/93
Acenaphthylene	208-96-8	ND	330	ug/kg	12/30/93
Anthracene	120-12-7	ND	330	ug/kg	12/30/93
Benzidine	92-87-5	ND	1600	ug/kg	12/30/93
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/30/93
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/30/93
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/30/93
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/30/93
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/30/93
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/30/93
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/30/93
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/30/93
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/30/93
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/30/93
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/30/93
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/30/93
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/30/93
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/30/93
2-Chloronapththalene	91-58-7	ND	330	ug/kg	12/30/93
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/30/93
Chrysene	218-01-9	ND	330	ug/kg	12/30/93
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/30/93
Dibenzofuran	132-64-9	ND	330	ug/kg	12/30/93
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/30/93
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/30/93
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/30/93
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/30/93
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/30/93
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/30/93
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/30/93
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/30/93
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/30/93
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/30/93
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	12/30/93
Fluoranthene	206-44-0	ND	330	ug/kg	12/30/93
Fluorene	86-73-7	ND	330	ug/kg	12/30/93
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/30/93
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/30/93
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/30/93

HARZA KALDVEER

SAMPLE ID: SWB-8/10-10.5'
AEN LAB NO: 9312104-03A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Hexachloroethane	67-72-1	ND	330	ug/kg	12/30/93
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/30/93
Isophorone	78-59-1	ND	330	ug/kg	12/30/93
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/30/93
Naphthalene	91-20-3	ND	330	ug/kg	12/30/93
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/30/93
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/30/93
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/30/93
Nitrobenzene	98-95-3	ND	330	ug/kg	12/30/93
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	12/30/93
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/30/93
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/30/93
Phenanthrene	85-01-8	1,200 *	330	ug/kg	12/30/93
Pyrene	129-00-0	ND	330	ug/kg	12/30/93
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/30/93
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/30/93
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/30/93
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/30/93
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/30/93
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/30/93
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/30/93
2-Methylphenol	95-48-7	ND	330	ug/kg	12/30/93
4-Methylphenol	106-44-5	ND	330	ug/kg	12/30/93
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/30/93
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/30/93
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/30/93
Phenol	108-95-2	ND	330	ug/kg	12/30/93
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/30/93
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/30/93

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: SWB-8/15-15.5'
AEN LAB NO: 9312104-04A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/22/93
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	01/04/94
Acenaphthylene	208-96-8	ND	330	ug/kg	01/04/94
Anthracene	120-12-7	ND	330	ug/kg	01/04/94
Benzidine	92-87-5	ND	1600	ug/kg	01/04/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	01/04/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	01/04/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	01/04/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	01/04/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	01/04/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	01/04/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	01/04/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	01/04/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	01/04/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	01/04/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	01/04/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	01/04/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	01/04/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	01/04/94
2-Chloronapthalene	91-58-7	ND	330	ug/kg	01/04/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	01/04/94
Chrysene	218-01-9	ND	330	ug/kg	01/04/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	01/04/94
Dibenzofuran	132-64-9	ND	330	ug/kg	01/04/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	01/04/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	01/04/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	01/04/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	01/04/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	01/04/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	01/04/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	01/04/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	01/04/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	01/04/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	01/04/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	01/04/94
Fluoranthene	206-44-0	ND	330	ug/kg	01/04/94
Fluorene	86-73-7	ND	330	ug/kg	01/04/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	01/04/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	01/04/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	01/04/94

HARZA KALDVEER

SAMPLE ID: SWB-8/15-15.5'
AEN LAB NO: 9312104-04A
AEN WORK ORDER: 9312104
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 01/18/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Hexachloroethane	67-72-1	ND	330	ug/kg	01/04/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	01/04/94
Isophorone	78-59-1	ND	330	ug/kg	01/04/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	01/04/94
Naphthalene	91-20-3	ND	330	ug/kg	01/04/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	01/04/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	01/04/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	01/04/94
Nitrobenzene	98-95-3	ND	330	ug/kg	01/04/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	01/04/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	01/04/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	01/04/94
Phenanthrene	85-01-8	740 *	330	ug/kg	01/04/94
Pyrene	129-00-0	ND	330	ug/kg	01/04/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	01/04/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	01/04/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	01/04/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	01/04/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	01/04/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	01/04/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	01/04/94
2-Methylphenol	95-48-7	ND	330	ug/kg	01/04/94
4-Methylphenol	106-44-5	ND	330	ug/kg	01/04/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	01/04/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	01/04/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	01/04/94
Phenol	108-95-2	ND	330	ug/kg	01/04/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	01/04/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	01/04/94

ND = Not detected
* = Indicates value above reporting limit

PAGES 14 - 18

WATER DATA

INCLUDED IN APPENDIX B

QUALITY CONTROL DATA

INSTRUMENT: 13

AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloro-ethane-d_4	Toluene-d_8	p-Bromofluoro-benzene
12/14/93	SWB-8/0.5-1'	01	105	100	102
12/14/93	SWB-8/5-5.5'	02	116	98	110

CURRENT QC LIMITS (Revised 11/21/93)

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d4	(68-141)
Toluene-d8	(89-119)
p-Bromofluorobenzene	(85-112)

QUALITY CONTROL DATA

DATE ANALYZED: 12/15/93
SAMPLE SPIKED: 9312093-11
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
INSTRUMENT: 13

SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	85	2
Trichloroethene	50.0	94	3
Benzene	50.0	96	2
Toluene	50.0	97	1
Chlorobenzene	50.0	95	2

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

INSTRUMENT: 12 AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloroethane-d_4	Toluene-d_8	p-Bromofluorobenzene
12/16/93	SWB-8	05	96	103	107

CURRENT QC LIMITS (Revised 11/21/93)

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d4	(77-123)
Toluene-d8	(90-108)
p-Bromofluorobenzene	(89-109)

QUALITY CONTROL DATA

DATE ANALYZED: 12/16/93
SAMPLE SPIKED: 9312090-01
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	102	9
Trichloroethene	50.0	102	2
Benzene	50.0	102	1
Toluene	50.0	103	1
Chlorobenzene	50.0	98	<1

CURRENT QC LIMITS (Revised 11/21/93)

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(81-123)	12
Trichloroethene	(87-112)	9
Benzene	(92-116)	12
Toluene	(91-116)	12
Chlorobenzene	(92-113)	10

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/14,22/93

AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112

INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Sample Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/19/93	SWB-8/0.5-1'	01	59	87	53	64	64	63
12/19/93	SWB-8/5-5.5'	02	75	104	62	93	80	80
12/30/93	SWB-8/10-10.5'	03	48	57	39	49	54	68
01/04/94	SWB-8/15-15.5'	04	43	54	48	39	34	65

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d_{14}	(18-137)
Phenol-d_5	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

QUALITY CONTROL DATA

DATE EXTRACTED: 12/14/93
DATE ANALYZED: 12/20/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
SAMPLE SPIKED: 9312105-01A
INSTRUMENT: 11

SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	80	5
2-Chlorophenol	3330	79	2
1,4-Dichlorobenzene	3400	70	4
N-Nitroso-di-n-propylamine	3320	90	2
1,2,4-Trichlorobenzene	3330	71	3
4-Chloro-3-methylphenol	3270	102	5
Acenaphthene	3330	77	5
4-NitrophenoL	3300	71	9
2,4-Dinitrotoluene	3330	68	5
Pentachlorophenol	3380	63	6
Pyrene	3320	55	12

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/15/93
DATE ANALYZED: 12/24/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
SAMPLE SPIKED: 9312129-11
INSTRUMENT: 11

SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Conc. (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	66	1
2-Chlorophenol	3330	66	7
1,4-Dichlorobenzene	3400	57	8
N-Nitroso-di-n-propylamine	3320	68	5
1,2,4-Trichlorobenzene	3330	58	5
4-Chloro-3-methylphenol	3270	84	25
Acenaphthene	3330	72	12
4-NitrophenoL	3300	68	21
2,4-Dinitrotoluene	3330	68	14
Pentachlorophenol	3380	56	4
Pyrene	3320	43	3

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

DATE EXTRACTED: 12/13/93 AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112 INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Client Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
12/20/93	SWB-8	05	67	60	41	73	59	62

CURRENT QC LIMITS (REVISED 01/08/92)

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(47-104)
2-Fluorobiphenyl	(49-106)
Terphenyl-d_{14}	(38-128)
Phenol-d_5	(46-105)
2-Fluorophenol	(40- 97)
2,4,6-Tribromophenol	(37-145)

QUALITY CONTROL DATA

DATE EXTRACTED: 12/13/93
DATE ANALYZED: 12/21/93
CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
SAMPLE SPIKED: D.I. WATER
INSTRUMENT: 11

METHOD SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(WATER MATRIX)

ANALYTE	Spike Conc. (ug/L)	Average Percent Recovery	RPD
Phenol	200	68	8
2-Chlorophenol	200	79	1
1,4-Dichlorobenzene	204	59	7
N-Nitroso-di-n-propylamine	199	74	9
1,2,4-Trichlorobenzene	200	59	10
4-Chloro-3-methylphenol	196	93	3
Acenaphthene	200	71	9
4-Nitrophenol	198	72	8
2,4-Dinitrotoluene	200	72	4
Pentachlorophenol	203	67	8
Pyrene	199	41	12

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(12-110)	42
2-Chlorophenol	(27-123)	40
1,4-Dichlorobenzene	(36- 97)	28
4-Nitroso-di-n-propylamine	(41-116)	38
1,2,4-Trichlorobenzene	(39- 98)	28
4-Chloro-3-methylphenol	(23- 97)	42
Acenaphthene	(46-118)	31
4-Nitrophenol	(10- 80)	50
2,4-Dinitrotoluene	(24- 96)	38
Pentachlorophenol	(9-103)	50
Pyrene	(26-127)	31

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9312104
SAMPLE SPIKED: SAND
DIGESTION DATE: 12/14/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/kg)	% REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	54	2	50-150	20
As, Arsenic	4000/7060	20	84	<1	75-125	20
Cd, Cadmium	ICP/6010	10	84	2	75-125	20
Cr, Chromium	ICP/6010	50	92	2	75-125	20
Cu, Copper	ICP/6010	50	91	3	75-125	20
Ni, Nickel	ICP/6010	50	90	2	75-125	20
Pb, Lead	ICP/6010	50	90	3	75-125	20
Se, Selenium	4000/7740	40	91	9	73-126	14
Zn, Zinc	ICP/6010	50	87	2	75-125	20

RPD = Relative Percent Difference
< = Less Than

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 12/13/93

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	% REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.10	101	2	66-127	11
As, Arsenic	4000/7060	0.04	105	4	90-115	12
Cd, Cadmium	ICP/6010	0.05	99	5	71-134	12
Cr, Chromium	ICP/6010	0.20	104	2	85-114	6
Cu, Copper	ICP/6010	0.25	95	2	86-112	5
Ni, Nickel	ICP/6010	0.5	99	2	87-114	5
Pb, Lead	4000/6010	0.5	99	2	87-115	6
Se, Selenium	4000/7740	0.08	102	1	76-131	14
Zn, Zinc	ICP/6010	0.5	101	2	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

MATRIX: WATER

AEN JOB NO: 9312104

CLIENT PROJ. ID: KE1495-1A-2112

DIGESTION DATE: 01/05-10/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	TRUE VALUE (mg/L)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	0.25	83	4	66-127	11
As, Arsenic	4000/7060	0.04	95	9	90-115	12
Cd, Cadmium	ICP/6010	0.25	103	5	71-134	12
Cr, Chromium	ICP/6010	0.2	103	3	85-114	6
Cu, Copper	ICP/6010	0.25	103	3	86-112	5
Ni, Nickel	ICP/6010	0.5	102	3	87-114	5
Pb, Lead	ICP/6010	0.5	101	6	87-115	6
Se, Selenium	4000/7740	0.08	95	1	76-131	14
Zn, Zinc	ICP/6010	0.5	108	2	86-115	5

RPD = Relative Percent Difference

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

C-1, S-2 (plast)
R-3, S-2 (voas)
R-5, S-M (ambers)
R-4, S-A (soils)

Lab Job # 9312104

CHAIN-OF-CUSTODY RECORD

Project Number: KE1495-1A-2112

Project Name: Fuller O'Brien

Location: So S.F., CA

Sampler's Name (printed): Tacia Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals - Unfiltered	Metals - To be filtered				Remarks
SWB-8/05-1'	01A	12/8/93	X	X	2x6" Brass			X	X				X					12/22 Per Steve Henshaw pls.
SWB-8/5-5.5'	02A							X	X				X					add 8270 analysis to samples;
SWB-8/10-10.5'	03A								✓									~~Hold~~ SWB-8/10-10.5' &
SWB-8/15-15.5'	04A								✓									~~Hold~~ SWB-8/15-15.5'.
SWB-8	05AB			X	2x40mL VOAs			X										Jkts
SWB-8	05CD				2x1L Ambers				X									01/04 - Per Tacia, pls take sample
SWB-8	05E				1x500mL Plastic								X					SWB-8 off hold status and analyze
SWB-8	05F			X										X				Hold for metals listed below.
																		std. TAT is requested. Jkts
																		1-5-94 - SWB-8/5-5.5 was put on W.O.#
																		9312173, then sent out to
																		Jenkins, Sanders + Assoc. per client qq
																		Metals for Ag, As, Cr, Cd,
																		Pb, Ni, Se, Ag, Zn, Cu

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	12/8/93 16:40	[signature]
[signature]	12/8/93 19:00	
	12/8/93 1900	Received for Laboratory by: (Signature) Denise Harrington

Ship To:

Attention:

Phone No:

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA KALDVEER
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: 615J
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 01/26/94

DATE SAMPLED: 01/14/94

DATE RECEIVED: 01/14/94

AEN JOB NO: 9401119

PROJECT SUMMARY:

On January 14, 1994, this laboratory received two (2) soil samples.

Client requested samples be analyzed for inorganic parameters. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

HARZA KALDVEER

SAMPLE ID: MF-1
AEN LAB NO: 9401119-01
AEN WORK ORDER: 9401119
CLIENT PROJ. ID: 615J

DATE SAMPLED: 01/14/94
DATE RECEIVED: 01/14/94
REPORT DATE: 01/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion	EPA 3050	-		Prep Date	01/18/94
Arsenic	EPA 7060	1 *	1	mg/kg	01/21/94
Selenium	EPA 7740	ND	2	mg/kg	01/21/94
Cadmium	EPA 6010	0.1 *	0.1	mg/kg	01/20/94
Chromium	EPA 6010	15 *	1	mg/kg	01/20/94
Copper	EPA 6010	18 *	0.5	mg/kg	01/20/94
Lead	EPA 6010	42 *	1	mg/kg	01/20/94
Nickel	EPA 6010	14 *	1	mg/kg	01/20/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	01/20/94
Zinc	EPA 6010	43 *	1	mg/kg	01/20/94

ND = Not detected
* = Indicates value above reporting limit

HARZA KALDVEER

SAMPLE ID: MF-2
AEN LAB NO: 9401119-02
AEN WORK ORDER: 9401119
CLIENT PROJ. ID: 615J

DATE SAMPLED: 01/14/94
DATE RECEIVED: 01/14/94
REPORT DATE: 01/26/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion	EPA 3050	-		Prep Date	01/18/94
Arsenic	EPA 7060	ND	1	mg/kg	01/21/94
Selenium	EPA 7740	ND	2	mg/kg	01/21/94
Cadmium	EPA 6010	ND	0.1	mg/kg	01/20/94
Chromium	EPA 6010	20 *	1	mg/kg	01/20/94
Copper	EPA 6010	10 *	0.5	mg/kg	01/20/94
Lead	EPA 6010	22 *	1	mg/kg	01/20/94
Nickel	EPA 6010	16 *	1	mg/kg	01/20/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	01/20/94
Zinc	EPA 6010	22 *	1	mg/kg	01/20/94

ND = Not detected
* = Indicates value above reporting limit

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: 615J

AEN JOB NO: 9401119
SAMPLE SPIKED: SAND
DIGESTION DATE: 01/18/94

METHOD SPIKE RECOVERY SUMMARY

Compound	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Control Limits % Rec. Limit	QC Control Limits RPD Limit
Ag, Silver	ICP/6010	10	54	2	50-150	20
As, Arsenic	4000/7060	20	95	9	79-122	10
Cd, Cadmium	ICP/6010	10	89	2	75-125	20
Cr, Chromium	ICP/6010	50	96	2	75-125	20
Cu, Copper	ICP/6010	50	97	2	75-125	20
Ni, Nickel	ICP/6010	50	96	2	75-125	20
Pb, Lead	ICP/6010	50	101	1	75-125	20
Se, Selenium	4000/7740	40	99	5	73-126	14
Zn, Zinc	ICP/6010	50	95	2	75-125	20

RPD = Relative Percent Difference

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-7, S-M

9401119

Page 1 of 1

Lab Job # _____

CHAIN-OF-CUSTODY RECORD

Project Number: 6154

Project Name: Fuller O'Brien - Point of Rocks

Location: So. S.F., CA

Sampler's Name (printed): Tacia Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests	Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi - Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals -				Remarks
MF-1	01A	1/14/94	X		1"x6" Stainless Liner									X				
MF-2	02A	1/14/94	X											X				
																		Metals for Ag, As, Cd, Cr, Cu, Ni, Pb, Se, Zn

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	1/19/94 11:47	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	1/14/94 12:40	Lori L. Pruett
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

RECEIVED
JAN 26 1994

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11756

HARZA KALDVEER
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: KE1495-1-2112
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 01/24/94

DATE SAMPLED: 01/04/94

DATE RECEIVED: 01/04/94

AEN JOB NO: 9401011

PROJECT SUMMARY:

On January 4, 1994, this laboratory received one (1) soil sample.

Client requested the sample be analyzed for inorganic parameters. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

All laboratory quality control parameters were found to be within established limits. Batch QC data is included at the end of this report.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

HARZA KALDVEER

SAMPLE ID: E-2/3'
AEN LAB NO: 9401011-01
AEN WORK ORDER: 9401011
CLIENT PROJ. ID: KE1495-1-2112

DATE SAMPLED: 01/04/94
DATE RECEIVED: 01/04/94
REPORT DATE: 01/24/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion		-		Prep Date	01/06/94
Arsenic	EPA 7060	8 *	1	mg/kg	01/11/94
Selenium	EPA 7740	ND	2	mg/Kg	01/11/94
Cadmium	EPA 6010	0.5 *	0.1	mg/kg	01/11/94
Chromium	EPA 6010	75 *	1	mg/kg	01/11/94
Copper	EPA 6010	83 *	1	mg/kg	01/11/94
Lead	EPA 6010	810 *	1	mg/kg	01/11/94
Nickel	EPA 6010	150 *	1	mg/kg	01/11/94
Silver	EPA 6010	0.4 *	0.1	mg/Kg	01/11/94
Zinc	EPA 6010	180 *	1	mg/kg	01/11/94

ND = Not detected
* = Indicates value above reporting limit

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1-2112

AEN JOB NO: 9401011
SAMPLE SPIKED: SAND
DIGESTION DATE: 01/06/94

METHOD SPIKE RECOVERY SUMMARY

COMPOUND	INST./ METHOD	SPIKE ADDED (mg/kg)	AVERAGE % REC.	RPD	QC CONTROL LIMITS % REC. LIMIT	QC CONTROL LIMITS RPD LIMIT
Ag, Silver	ICP/6010	10	57	2	50-150	20
As, Arsenic	4000/7060	10	93	1	79-122	10
Cd, Cadmium	ICP/6010	10	89	6	75-125	20
Cr, Chromium	ICP/6010	50	100	2	75-125	20
Cu, Copper	ICP/6010	50	100	2	75-125	20
Ni, Nickel	ICP/6010	50	101	2	75-125	20
Pb, Lead	ICP/6010	50	100	1	75-125	20
Se, Selenium	4000/7740	40	99	1	73-126	14
Zn, Zinc	ICP/6010	50	97	2	75-125	20

RPD = Relative Percent Difference

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

Lab Job # 9401011

R-4,5-A

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
KE19F1-2112	Fuller O'Brien
	Location So. S.F., CA

Sampler's Name (printed): Tara Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests	Remarks
~~X-3/3'~~ E-2/3'	01A	1/4/93	X		1"x6" Liner	Waste Oil – Metals – X	Metals for As, Ag, Cd, Cr, Cu, Ni, Pb, Zn, Se
							01/06 - Per Tara pls change sample id from x-3/3' to E-2/3'. JKP-S

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tara L. Miller	1/4/94 1230	Ron Stoddard
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Ron Stoddard	1/4/94 1700	Lori L Pruitt
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER

CLIENT PROJ. ID: KE1495-1A-2112
PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 03/29/94

DATE SAMPLED: 12/08-09/93
DATE RECEIVED: 12/08-09/93

ADDITIONAL ANALYSIS
REQUESTED: 03/16/94

AEN JOB NO: 9403180

PROJECT SUMMARY:

On March 16, 1994, client requested two (2) samples be taken off hold and additional analysis on three (3) samples received by this laboratory on December 8 and 9, 1993.

Client requested samples be analyzed for inorganic parameters. Sample identification, methodologies, results, and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Andrew Bradleen for
Larry Klein
General Manager

HARZA

SAMPLE ID: SWB-8/10-10.5'
AEN LAB NO: 9403180-01
AEN WORK ORDER: 9403180
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 03/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	03/21/94
Arsenic	EPA 7060	3 *	1	mg/kg	03/22/94
Selenium	EPA 7740	ND	2	mg/kg	03/22/94
#Digestion	EPA 3050	-		Prep Date	03/21/94
Cadmium	EPA 6010	ND	0.1	mg/kg	03/23/94
Chromium	EPA 6010	63 *	1	mg/kg	03/23/94
Copper	EPA 6010	45 *	0.5	mg/kg	03/23/94
Lead	EPA 6010	32 *	1	mg/kg	03/23/94
Nickel	EPA 6010	130 *	1	mg/kg	03/23/94
Silver	EPA 6010	0.2 *	0.1	mg/kg	03/23/94
Zinc	EPA 6010	100 *	1	mg/kg	03/23/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: SWB-8/15-15.5'
AEN LAB NO: 9403180-02
AEN WORK ORDER: 9403180
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/08/93
DATE RECEIVED: 12/08/93
REPORT DATE: 03/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	03/21/94
Arsenic	EPA 7060	7 *	1	mg/kg	03/22/94
Selenium	EPA 7740	ND	2	mg/kg	03/22/94
#Digestion	EPA 3050	-		Prep Date	03/21/94
Cadmium	EPA 6010	0.2 *	0.1	mg/kg	03/23/94
Chromium	EPA 6010	32 *	1	mg/kg	03/23/94
Copper	EPA 6010	99 *	0.5	mg/kg	03/23/94
Lead	EPA 6010	160 *	1	mg/kg	03/23/94
Nickel	EPA 6010	150 *	1	mg/kg	03/23/94
Silver	EPA 6010	0.3 *	0.1	mg/kg	03/23/94
Zinc	EPA 6010	190 *	1	mg/kg	03/23/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: SWB-5/10-10.5'
AEN LAB NO: 9403180-03
AEN WORK ORDER: 9403180
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 03/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	03/21/94
Arsenic	EPA 7060	3 *	1	mg/kg	03/22/94
Selenium	EPA 7740	ND	2	mg/kg	03/22/94
#Digestion	EPA 3050	-		Prep Date	03/21/94
Cadmium	EPA 6010	0.3 *	.0.1	mg/kg	03/23/94
Chromium	EPA 6010	50 *	1	mg/kg	03/23/94
Copper	EPA 6010	110 *	0.5	mg/kg	03/23/94
Lead	EPA 6010	7 *	1	mg/kg	03/23/94
Nickel	EPA 6010	50 *	1	mg/kg	03/23/94
Silver	EPA 6010	0.2 *	0.1	mg/kg	03/23/94
Zinc	EPA 6010	170 *	1	mg/kg	03/23/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: SWB-11/10-10.5'
AEN LAB NO: 9403180-04
AEN WORK ORDER: 9403180
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 03/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	03/21/94
Arsenic	EPA 7060	3 *	1	mg/kg	03/22/94
Selenium	EPA 7740	ND	2	mg/kg	03/22/94
#Digestion	EPA 3050	-		Prep Date	03/21/94
Cadmium	EPA 6010	0.7 *	0.1	mg/kg	03/23/94
Chromium	EPA 6010	63 *	1	mg/kg	03/23/94
Copper	EPA 6010	64 *	0.5	mg/kg	03/23/94
Lead	EPA 6010	470 *	1	mg/kg	03/23/94
Nickel	EPA 6010	49 *	1	mg/kg	03/23/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	03/23/94
Zinc	EPA 6010	530 *	1	mg/kg	03/23/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: SWB-11/15-15.5'
AEN LAB NO: 9403180-05
AEN WORK ORDER: 9403180
CLIENT PROJ. ID: KE1495-1A-2112

DATE SAMPLED: 12/09/93
DATE RECEIVED: 12/09/93
REPORT DATE: 03/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	03/21/94
Arsenic	EPA 7060	2 *	1	mg/kg	03/22/94
Selenium	EPA 7740	ND	2	mg/kg	03/22/94
#Digestion	EPA 3050	-		Prep Date	03/21/94
Cadmium	EPA 6010	0.2 *	0.1	mg/kg	03/23/94
Chromium	EPA 6010	61 *	1	mg/kg	03/23/94
Copper	EPA 6010	8.8 *	0.5	mg/kg	03/23/94
Lead	EPA 6010	9 *	1	mg/kg	03/23/94
Nickel	EPA 6010	37 *	1	mg/kg	03/23/94
Silver	EPA 6010	ND	0.1	mg/kg	03/23/94
Zinc	EPA 6010	25 *	1	mg/kg	03/23/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9403180

CLIENT PROJECT ID: KE1495-1A-2112

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: KE1495-1A-2112

AEN JOB NO: 9403180
SAMPLE SPIKED: SAND
DIGESTION DATE: 03/21/94

METHOD SPIKE RECOVERY SUMMARY

Compound	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Limits % Rec. Limit	QC Limits RPD Limit
Ag, Silver	ICP/6010	10	58	4	50-150	20
As, Arsenic	4000/7060	20	95	7	79-122	10
Cd, Cadmium	ICP/6010	10	91	1	75-125	20
Cr, Chromium	ICP/6010	50	98	3	75-125	20
Cu, Copper	ICP/6010	50	99	3	75-125	20
Ni, Nickel	ICP/6010	50	96	2	75-125	20
Pb, Lead	ICP/6010	50	95	3	75-125	20
Se, Selenium	4000/7740	40	94	6	73-126	14
Zn, Zinc	ICP/6010	50	92	4	75-125	20

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

C-1, S-2 (plastics)
R-3, S-2 (coals)
R-5, S-M (ambers)
R-4, S-A (soils) R-7, S-K

Page of 940378

Lab Job #

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name / Location
1E1195-1A-2112	Fuller O'Brien / So S.F., CA

Sampler's Name (printed): Tricia Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container
SWS-8/0.5-1'	01A	12/8/93	X	X	3x6" Brass
SWS-8/5.5'	02A				
SWB-8/10-10.5'	~~03A~~ 01A				
SWB-8/15-15.5'	~~04A~~ 02A				
SWS-8	05AB			X	2x40mL VOAs
SWB-8	05CD				2x1L Ambers
SWB-8	05E				1x500mL Plastic
SWB-8	05F			X	

Analytical Tests: Method 8015 – TPH as Gasoline; Method 8015 – TPH as Diesel; Method 8240 – Volatile Organics; Method 8270 – Semi-Volatile Organics; Method 8010 – Halogenated Volatile Organics; Method 8080 – Organochlorine Pesticides & PCB's; Waste Oil –; Metals – Unfiltered; Metals – To be Filtered; Ag, As, Cd, Cr, Cu, Ni, Pb, Se, Zn, Cu, Ni, per client 3/1994 – Standard TAT

Remarks:
12/22 Tel Steve Hill from [illegible] re 8270 analysis [illegible] samples
Hold SWB-5 [illegible]
Hold SWB-5 [illegible]
01/04 Tel Tricia [illegible]
SWB-5 [illegible]
Hold [illegible]
1-5-94 - SWB-5 [illegible]
93121173 [illegible] sent out to [illegible]
Metals for Ag, As, Cr, Cd, Pb, Ni, Se (Ag, Zn, Cu)

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tricia C. Miller	12/8/93 16:40	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	12/8/93 19:00	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
	12/8/93 1900	Denise Harrington

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

R-4 B-
C-1, 2
R-1, S-H
R-3, S-3

940378

Lab Job # 93444

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
KE1495-1A-2112	Fuller O'Brien
	Location So. S.F., CA

Sampler's Name (printed): TACIA MILLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals - Unfiltered	Metals - Filtered	Ag, As, Cd, Cr, Cu, Ni, Pb, Se, Zn per Client Standard	Remarks
SWB11/0-10S	16A04A	12/3	X		1 x 6" Brass										X	Hold
SWB-11/5-15S	17A05A		X		↓										X	Hold
SWB-3	18AB			X	2 x 40mL VOAs	X										
SWB-3	CD				2 x 1L Amber	X	X									
SWB-3	E				1 x 500mL Plastic		X					X				
SWB-3	F				↓							X	X			Hold Filtered
SWB-4	19AB				2 x 40mL VOAs	X										
SWB-4	CD				1 x 1L Amber	X	X									
SWB-4	E				1 x 500mL Plastic							X				
SWB-4	F				↓								X			Hold Filtered
SWB-5	20AB				2 x 40mL VOAs	X										
SWB-5	CD				2 x 1L Amber	X	X									
SWB-5	E				1 x 500mL Plastic							X				
SWB-5	F				↓								X			Hold Filtered
SWB 7	21AB	↓		↓	2 x 40mL VOAs	X										

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	12/6/93 530	Karl Stallup
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Karl Stallup	12/9/93 8:45	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
		Denise Harrington

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks: Metals for As, Cd, Cr, Pb, Ni, Se, Ag, Zn, Cu

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

R-4, S 3 (soils)
C-1, S
K-1, S-H
R-3, S-3

Page 1 of 3

Lab Job # ~~9312129~~ 9403180

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
KE1495-1A-2112	Fuller O'Brien
	Location: So. S.F.

Sampler's Name (printed): TACIA MILLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals -	Ag, As, Cd, Cr, Cu, Ni, Pb, Se, Zn per Cuenc 3/16/94 - Standard TAT	Remarks
SWB-3/05-1	01A (2)	12/9/93	X		1"x6" Stainless-2			X	X				X		12/10 - Per Steve Henshaw add
SWB-3/5-5.5	02A (2)							X	X				X		Cu to all metals analysis.
SWB-3/10-10.5	03A (2)														Hold (KPS)
SWB-4/05-1	04A (2)							X	X				X		
SWB-4/5-5.5	05A (2)							X	X				X		
SWB-4/10-10.5	06A (2)														Hold
SWB-5/05-1	~~07A~~ 11A				2x6" Liner			X	X				X		
SWB-5/5-5.5	~~08A~~ 12A							X	X				X		
SWB-5/10-10.5	~~09A~~ ~~13A~~ 03A							✓						*	Hold 12/23 [illegible]
SWB-7/1-1.5	~~10A~~ 07A							X	X				X		[illegible]
SWB-7/5-5.5	~~11A~~ 08A							X	X				X		[illegible]
SWB-7/10-10.5	~~12A~~ 09A														Hold
SWB-7/15-15.5	~~13A~~ 10A														Hold
SWB-11/05-1	14A							X	X				X		
SWB-11/5-5.5	15A							X	X				X		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	12/9/93 530	Ken Stallup
Ken Stallup	12/9/93 645	
		Received for Laboratory by: (Signature) Denise Harrington

Ship To:

Attention:

Phone No:

Requested Turnaround Time: Normal

Kaldveer Assoc. Contact: T. Miller

Remarks: Metals for As, Cd, Cr, Pb, Ni, Se, Ag, Zn, Cu

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 1154

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER
CLIENT PROJ. ID: K615I
CLIENT PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 04/19/94

DATE(S) SAMPLED: 04/05/94

DATE RECEIVED: 04/06/94

AEN WORK ORDER: 9404063

PROJECT SUMMARY:

On April 6, 1994, this laboratory received 6 soil sample(s).

Client requested samples be analyzed for inorganic and organic parameters. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

HARZA

SAMPLE ID: MF-1A
AEN LAB NO: 9404063-01
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	4 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	0.2 *	0.1	mg/kg	04/14/94
Chromium	EPA 6010	31 *	1	mg/kg	04/14/94
Copper	EPA 6010	67 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	79 *	1	mg/kg	04/14/94
Nickel	EPA 6010	26 *	1	mg/kg	04/14/94
Silver	EPA 6010	0.3 *	0.1	mg/kg	04/14/94
Zinc	EPA 6010	100 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-1A
AEN LAB NO: 9404063-01
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	04/07/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	690 *	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1A
AEN LAB NO: 9404063-01
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	430 *	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	ND	330	ug/kg	04/12/94
Pyrene	129-00-0	600 *	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1A
AEN LAB NO: 9404063-01
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-1B
AEN LAB NO: 9404063-02
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	4 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	0.1 *	0.1	mg/kg	04/14/94
Chromium	EPA 6010	34 *	1	mg/kg	04/14/94
Copper	EPA 6010	47 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	75 *	1	mg/kg	04/14/94
Nickel	EPA 6010	28 *	1	mg/kg	04/14/94
Silver	EPA 6010	0.2 *	0.1	mg/kg	04/14/94
Zinc	EPA 6010	80 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-1B
AEN LAB NO: 9404063-02
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	04/07/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	860 *	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1B
AEN LAB NO: 9404063-02
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	ND	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	ND	330	ug/kg	04/12/94
Pyrene	129-00-0	ND	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1B
AEN LAB NO: 9404063-02
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-1C
AEN LAB NO: 9404063-03
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	4 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	0.2 *	0.1	mg/kg	04/14/94
Chromium	EPA 6010	36 *	1	mg/kg	04/14/94
Copper	EPA 6010	71 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	76 *	1	mg/kg	04/14/94
Nickel	EPA 6010	32 *	1	mg/kg	04/14/94
Silver	EPA 6010	0.3 *	0.1	mg/kg	04/14/94
Zinc	EPA 6010	95 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-1C
AEN LAB NO: 9404063-03
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	04/07/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	590 *	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1C
AEN LAB NO: 9404063-03
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	ND	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	ND	330	ug/kg	04/12/94
Pyrene	129-00-0	430 *	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-1C
AEN LAB NO: 9404063-03
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2A
AEN LAB NO: 9404063-04
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	2 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	ND	0.1	mg/kg	04/14/94
Chromium	EPA 6010	15 *	1	mg/kg	04/14/94
Copper	EPA 6010	65 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	33 *	1	mg/kg	04/14/94
Nickel	EPA 6010	16 *	1	mg/kg	04/14/94
Silver	EPA 6010	ND	0.1	mg/kg	04/14/94
Zinc	EPA 6010	55 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-2A
AEN LAB NO: 9404063-04
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	04/07/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2A
AEN LAB NO: 9404063-04
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	ND	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	ND	330	ug/kg	04/12/94
Pyrene	129-00-0	ND	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2A
AEN LAB NO: 9404063-04
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2B
AEN LAB NO: 9404063-05
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	2 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	ND	0.1	mg/kg	04/14/94
Chromium	EPA 6010	20 *	1	mg/kg	04/14/94
Copper	EPA 6010	39 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	40 *	1	mg/kg	04/14/94
Nickel	EPA 6010	22 *	1	mg/kg	04/14/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	04/14/94
Zinc	EPA 6010	48 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-2B
AEN LAB NO: 9404063-05
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	04/07/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2B
AEN LAB NO: 9404063-05
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	770 *	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	530 *	330	ug/kg	04/12/94
Pyrene	129-00-0	720 *	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2B
AEN LAB NO: 9404063-05
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MF-2C
AEN LAB NO: 9404063-06
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Digestion/Graph. Furnace	EPA 3050	-		Prep Date	04/13/94
Arsenic	EPA 7060	2 *	1	mg/kg	04/14/94
Selenium	EPA 7740	ND	2	mg/kg	04/14/94
#Digestion	EPA 3050	-		Prep Date	04/13/94
Cadmium	EPA 6010	ND	0.1	mg/kg	04/14/94
Chromium	EPA 6010	32 *	1	mg/kg	04/14/94
Copper	EPA 6010	160 *	0.5	mg/kg	04/14/94
Lead	EPA 6010	18 *	1	mg/kg	04/14/94
Nickel	EPA 6010	45 *	1	mg/kg	04/14/94
Silver	EPA 6010	0.2 *	0.1	mg/kg	04/14/94
Zinc	EPA 6010	160 *	1	mg/kg	04/14/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	04/14/94
Benzene	71-43-2	ND	5	ug/kg	04/14/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	04/14/94
Bromoform	75-25-2	ND	5	ug/kg	04/14/94
Bromomethane	74-83-9	ND	10	ug/kg	04/14/94
2-Butanone	78-93-3	ND	100	ug/kg	04/14/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	04/14/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	04/14/94
Chlorobenzene	108-90-7	ND	5	ug/kg	04/14/94
Chloroethane	75-00-3	ND	10	ug/kg	04/14/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	04/14/94
Chloroform	67-66-3	ND	5	ug/kg	04/14/94
Chloromethane	74-87-3	ND	10	ug/kg	04/14/94
Dibromochloromethane	124-48-1	ND	5	ug/kg	04/14/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	04/14/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	04/14/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	04/14/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	04/14/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	04/14/94

HARZA

SAMPLE ID: MF-2C
AEN LAB NO: 9404063-06
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	04/14/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	04/14/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	04/14/94
Ethylbenzene	100-41-4	ND	5	ug/kg	04/14/94
2-Hexanone	591-78-6	ND	50	ug/kg	04/14/94
Methylene Chloride	75-09-2	ND	5	ug/kg	04/14/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	04/14/94
Styrene	100-42-5	ND	5	ug/kg	04/14/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	04/14/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	04/14/94
Toluene	108-88-3	ND	5	ug/kg	04/14/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	04/14/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	04/14/94
Trichloroethene	79-01-6	ND	5	ug/kg	04/14/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	04/14/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	04/14/94
Xylenes Total	1330-20-7	ND	10	ug/kg	04/14/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	04/07/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	04/12/94
Acenaphthylene	208-96-8	ND	330	ug/kg	04/12/94
Anthracene	120-12-7	ND	330	ug/kg	04/12/94
Benzidine	92-87-5	ND	1600	ug/kg	04/12/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	04/12/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	04/12/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	04/12/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	04/12/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	04/12/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	04/12/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	04/12/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	04/12/94
Bis(2-chloroethyl) Ether	111-44-4	ND	330	ug/kg	04/12/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	04/12/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	04/12/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	04/12/94
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	04/12/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	04/12/94
2-Chloronapththalene	91-58-7	ND	330	ug/kg	04/12/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	04/12/94
Chrysene	218-01-9	ND	330	ug/kg	04/12/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2C
AEN LAB NO: 9404063-06
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibenzofuran	132-64-9	ND	330	ug/kg	04/12/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	04/12/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	04/12/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	04/12/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	04/12/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	04/12/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	04/12/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	04/12/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	04/12/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	04/12/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	04/12/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	04/12/94
Fluoranthene	206-44-0	ND	330	ug/kg	04/12/94
Fluorene	86-73-7	ND	330	ug/kg	04/12/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	04/12/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	04/12/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	04/12/94
Hexachloroethane	67-72-1	ND	330	ug/kg	04/12/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	04/12/94
Isophorone	78-59-1	ND	330	ug/kg	04/12/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	04/12/94
Naphthalene	91-20-3	ND	330	ug/kg	04/12/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	04/12/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	04/12/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	04/12/94
Nitrobenzene	98-95-3	ND	330	ug/kg	04/12/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	04/12/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	04/12/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	04/12/94
Phenanthrene	85-01-8	ND	330	ug/kg	04/12/94
Pyrene	129-00-0	ND	330	ug/kg	04/12/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	04/12/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	04/12/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	04/12/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	04/12/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	04/12/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	04/12/94
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	04/12/94
2-Methylphenol	95-48-7	ND	330	ug/kg	04/12/94
4-Methylphenol	106-44-5	ND	330	ug/kg	04/12/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	04/12/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	04/12/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	04/12/94

HARZA

SAMPLE ID: MF-2C
AEN LAB NO: 9404063-06
AEN WORK ORDER: 9404063
CLIENT PROJ. ID: K615I

DATE SAMPLED: 04/05/94
DATE RECEIVED: 04/06/94
REPORT DATE: 04/19/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Phenol	108-95-2	ND	330	ug/kg	04/12/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	04/12/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	04/12/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9404063

CLIENT PROJECT ID: K615I

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

INSTRUMENT: 12

AEN JOB NO: 9404063

CLIENT PROJ. ID: K615I

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab Id.	1,2-Dichloro-ethane-d_4	Toluene-d_8	p-Bromofluoro-benzene
04/14/94	MF-1A	01	104	106	99
04/14/94	MF-1B	02	107	115	102
04/14/94	MF-1C	03	101	114	96
04/14/94	MF-2A	04	103	103	95
04/14/94	MF-2B	05	110	113	102
04/14/94	MF-2C	06	99	107	103

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
1,2-Dichloroethane-d4	(68-141)
Toluene-d8	(89-119)
p-Bromofluorobenzene	(85-112)

QUALITY CONTROL DATA

DATE ANALYZED: 04/13/94
SAMPLE SPIKED: 9404058-22
CLIENT PROJ. ID: K615I

AEN JOB NO: 9404063
INSTRUMENT: 12

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8240
(SOIL MATRIX)

ANALYTE	Spike Added (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	115	3
Trichloroethene	50.0	101	4
Benzene	50.0	117	2
Toluene	50.0	99	2
Chlorobenzene	50.0	108	<1

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(66-143)	15
Trichloroethene	(60-127)	12
Benzene	(88-117)	10
Toluene	(70-126)	14
Chlorobenzene	(89-111)	13

QUALITY CONTROL DATA

DATE EXTRACTED: 04/07/94

AEN JOB NO: 9404063

CLIENT PROJ. ID: K615I

INSTRUMENT: 11

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Client Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
04/12/94	MF-1A	01	58	80	100	60	57	99
04/12/94	MF-1B	02	73	81	95	63	50	88
04/12/94	MF-1C	03	69	86	95	53	74	116
04/12/94	MF-2A	04	64	83	93	46	43	111
04/12/94	MF-2B	05	51	82	90	47	39	110
04/12/94	MF-2C	06	69	87	102	57	54	93

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Nitrobenzene-d_5	(23-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d_{14}	(18-137)
Phenol-d_5	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

QUALITY CONTROL DATA

DATE EXTRACTED: 04/07/94
DATE ANALYZED: 04/12/94
CLIENT PROJ ID: K615I

AEN JOB NO: 9404063
SAMPLE SPIKED: 9404063-04
INSTRUMENT: 11

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8270
(SOIL MATRIX)

ANALYTE	Spike Added (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	53	6
2-Chlorophenol	3330	48	22
1,4-Dichlorobenzene	3400	68	9
N-Nitroso-di-n-propylamine	3320	88	30
1,2,4-Trichlorobenzene	3330	70	4
4-Chloro-3-methylphenol	3270	90	19
Acenaphthene	3330	97	7
4-Nitrophenol	3300	96	4
2,4-Dinitrotoluene	3330	65	8
Pentachlorophenol	3380	66	24
Pyrene	3320	137	4

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
4-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

QUALITY CONTROL DATA

MATRIX: SOIL

CLIENT PROJ. ID: K615I

AEN JOB NO: 9404063
SAMPLE SPIKED: SAND
DATE DIGESTED: 04/13/94

METHOD SPIKE RECOVERY SUMMARY

Compound	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Limits % Rec. Limit	QC Limits RPD Limit
Ag, Silver	ICP/6010	10	57	2	38- 78	7
As, Arsenic	4000/7060	20	117	6	79-122	10
Ba, Barium	ICP/6010	200	101	1	85-108	6
Cd, Cadmium	ICP/6010	10	96	2	79-102	7
Cr, Chromium	ICP/6010	50	99	2	85-107	7
Cu, Copper	ICP/6010	50	102	<1	89-107	6
Ni, Nickel	ICP/6010	50	100	2	85-107	6
Pb, Lead	ICP/6010	50	103	2	84-111	7
Se, Selenium	4000/7740	40	111	<1	73-126	14
Zn, Zinc	ICP/6010	50	98	2	82-107	8

*** END OF REPORT ***

R-5, 5-D

Page 1 of 1

Lab Job # 940406

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name	Location
K615I	Fuller O'Brien Phase II RFI	So. S F., CA

Sampler's Name (printed): Tara Miller

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 – TPH as Gasoline	Method 8015 – TPH as Diesel	Method 8240 – Volatile Organics	Method 8270 – Semi-Volatile Organics	Method 8010 – Halogenated Volatile Organics	Method 8080 – Organochlorine Pesticides & PCB's	Waste Oil – Metals –	Remarks
MF-1A	01A	4/6/94	X		2x6" Brass Liner		X	X				X	
MF-1B	02A		X				X	X				X	
MF-1C	03A		X				X	X				X	
MF-2A	04A		X				X	X				X	
MF-2B	05A		X				X	X				X	
MF-2C	06A	↓	X		↓		X	X				X	Metals for As, Ag, Cd, Cr, Pb, Ni, Se, Zn, Cu

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tara A. Miller	4/6/94 1015	Michael E. McMillan
Michael E. McMillan	4/6/94 12:50	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 4-6-94 Anna Gillespie 1250

Ship To: _____

Attention: _____

Phone No: _____

Requested Turnaround Time: _____

Kaldveer Assoc. Contact: _____

Please address correspondence and return cooler # _____ to:

Remarks:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

DISTRIBUTION

DISTRIBUTION

Ms. Patricia Houle — 1 Copy
Corporate Environmental Manager
Fuller O'Brien Paints
395 Oyster Point Boulevard, Suite 350
South San Francisco, CA 94080

Mr. Tom Kelley, H-4-4 — 1 Copy
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Ms. Josephine Chien — 1 Copy
U.S. Environmental Protection Agency
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Ms. Diane Mims — 1 Copy
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California Regional Water Quality Control Board
San Francisco Bay Region 2
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Oakland, CA 94612

Mr. Michael Pixton — 1 Copy
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Department of Toxics Substances Control
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Dr. Ken Jenkins — 1 Copy
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4320 Atlantic Avenue, Suite 216
Long Beach, CA 90807

HARZA *Consulting Engineers and Scientists*

[redacted]

September 2, 1994

[redacted]/Client
Confi[redacted]

Mr. James Jaffe, Esq.
Jaffe, Trutanich, Scatena & Blum
50 Montgomery, Suite 900
San Francisco, CA 94104

Re: Soil Quality Results for Due Diligence Report
Fuller-O'Brien Paints, 450 East Grand Avenue, South San Francisco, California
Project No: K615-M

Dear Mr. Jaffe:

Please find attached, the above referenced attorney/client confidential report prepared by Harza Engineering and Environmental Scientists. This report addresses soil quality on a parcel of property located adjacent to Fuller-O'Brien Paints, South San Francisco facility, owned by Genentech, Inc.

If you have any questions regarding this matter please contact me.

Sincerely,

Harza Consulting Engineers and Scientists

Stephen R. Henshaw
Director, Environmental Services

SRH:ms
Copies: Addressee (6)

425 Roland Way Oakland, California 94621
Tel: (510) 568-4001 Fax: (510) 568-2205

255 North Market, Suite 248 San Jose, California 95110
Tel: (408) 288-8312 Fax: (510) 568-2205

[redacted]

Soil Quality Report
For
Due Diligence Evaluation
Of Genentech Property
South San Francisco, California

September 2, 1994

Prepared For:

Fuller-O'Brien Paints
395 Oyster Point Boulevard Suite 350
South San Francisco, California 94080

Prepared By:

Harza Consulting Engineers And Scientists
425 Roland Way
Oakland, California 94621

[redacted]

Soil Quality Report
For
Due Diligence Evaluation
Of Genentech Property
South San Francisco, California

September 2, 1994

Prepared For:

Fuller-O'Brien Paints
395 Oyster Point Boulevard Suite 350
South San Francisco, California 94080

Prepared By:

Harza Consulting Engineers And Scientists
425 Roland Way
Oakland, California 94621

Soil Quality Report
For
Due Diligence Evaluation
of Genentech Property
South San Francisco, California

September 2, 1994

Prepared For:

Fuller-O'Brien Paints
395 Oyster Point Boulevard, Suire 350
South San Francisco, CA 94080

Prepared By:

Harza Consulting Engineers and Scientists
425 Roland Way
Oakland, CA 94621

Stephen R. Henshaw
Director, Environmental Services

K615-M sreports\27565
09-02-94
Attorney/Client Confidential

HARZA

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removed by RHowell 12/5/95

HARZA

1.0 INTRODUCTION

This report presents the soil quality results associated with due diligence activities on a parcel of property owned by Genentech Inc. (Genentech) located east and adjacent to the Fuller-O'Brien Paints manufacturing facility, in South San Francisco, California.

The activities, performed at the request of Fuller-O'Brien Paints, were conducted in accordance with applicable federal, state, and local laws. Existing documents and plans, including Harza's December 28, 1993 document entitled: Phase II RCRA Facility Investigation Workplan, The O'Brien Corporation 450 East Grand Avenue, South San Francisco, California were used during these activities.

The purpose of this work is to characterize the soil quality on and adjacent to the Genentech, Inc. (Genentech) parcel, which borders the northeastern corner of the Fuller-O'Brien Paints facility and San Francisco Bay. The property boundary is approximated on Figure 2. The due diligence activities included the following:

- Drilling and collecting soil samples from four borings (G-1, G-2, G-3 and G-4).

- Analyzing soil samples at 2' and 5' below ground surface in each boring for total metals, volatile organic compounds, semi volatile organic compounds, total organic carbon, and total petroleum hydrocarbons.

- Preparing a status report presenting the data and findings of these activities.

This document was prepared for the sole use of The O'Brien Corporation (O'Brien) and Fuller-O'Brien Paints. No other party should rely on the information contained herein without Harza's prior written consent.

1.1 Project History

On March 23, 1994 O'Brien received notice from Genentech of environmental contamination at 330 Point San Bruno in South San Francisco, California. The property for which notice was provided is currently owned by Genentech and was purchased from Merck Chemical.

The actual claim involves a strip of shoreline located directly east of O'Brien's 450 East Grand Avenue property. Genentech claimed that possible further investigation and remediation were the responsibility of O'Brien. Genentech's claim was based on the results of a preliminary environmental assessment, prepared on April 20, 1994 for Genentech by Woodward-Clyde Consultants, entitled: Phase I/II Environmental Site Assessment, Marine Magnesium Company/Merck Site. Woodward-Clyde's document is presented in Appendix A.

On June 14, 1994 O'Brien and Genentech met to discuss Genentech's notice and claim. One of the options discussed in response to the notice and claim was the purchase of the property by O'Brien from Genentech.

1.2 Site Location and Background

The Fuller-O'Brien Paints manufacturing facility is located at 450 East Grand Avenue in South San Francisco, California (Figure 1). The facility is located on the Point San Bruno adjacent to the San Francisco Bay and the former San Bruno Channel (presently filled and acting as a marginal wetland). The Fuller-O'Brien Paints site is approximately 28-acres in size and is bounded on the north by the former Marine Magnesium facility and Genentech, on the east by Genentech and San Francisco Bay, on the south by marginal wetlands, and on the west by an air freight forwarding company. Surface elevations on-site range from 5 to 20 feet mean sea level (MSL).

The Fuller-O'Brien Paints site has been operated as a paint manufacturing facility for over 100 years. O'Brien started operating the facility in 1967 and purchased the property in 1970.

2.0 METHODS OF INVESTIGATION

On July 26, 1994, Harza drilled four borings and collected soil samples to characterize the soil quality on the Genentech parcel, which borders the northeastern corner of the Fuller-O'Brien Paints facility and San Francisco Bay (Figure 2). These borings, identified as G-1, G-2, G-3 and G-4, were drilled to depths of 6.5' below ground surface (bgs). Two soil samples were collected for chemical analysis from each boring at depths of 2.0' and 5.0' bgs.

The borings were drilled using a CME-75 drill rig equipped with 8-inch O.D. hollow stem augers. The soil samples were collected using a 2-inch I.D. Modified California sampler containing brass liners. Boring logs are presented in Appendix B. The samples were monitored using a photoionization detector (PID) to characterize the relative concentrations of volatile organic gases emanating from the soil.

Soil samples were collected in 2-inch diameter, 6-inch long brass liners. The tubes were then sealed on both ends with Teflon sheets and plastic end caps. The samples were labeled and stored in iced shipping containers for delivery under chain of custody to American Environmental Network (AEN), a California Environmental Protection Agency certified laboratory.

A total of eight soil samples, collected from the 2.0' and 5.0' depths, were analyzed for total metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total organic carbon (TOC), and total petroleum hydrocarbons. Total organic carbon can be used to determine retardation-value as they pertain to fate and transport of organic compounds.

The samples were analyzed using the following EPA analytical test methods:

VOCs	Method 8240
SVOCs	Method 8270
Total Metals	Method series 6000/7000
TOC	Method 415.1
TPH Extractables	Method 3550/GC-FID

3.0 CHEMICAL CHARACTERIZATION AND DISTRIBUTION

Soil quality data collected from borings G-1, G-2, G-3 and G-4 are summarized in Tables 1 through 5. Laboratory analytical reports are presented in Appendix C.

Elevated levels of lead were detected in samples from borings G-2 and G-3. Elevated levels of chromium, copper, and nickel were detected in samples from borings G-1 and G-4. No metals were detected at concentrations above their Total Threshold Limit Concentrations (TTLCs).

Volatile organic compounds (VOCs) were detected in all borings with elevated concentrations present in the 5.0' samples of G-2 and G-3. Sample G-2 at 5.0' exhibited ethylbenzene at 200 ppm, toluene at 78 ppm, and xylenes at 3,500 ppm.

Semi volatile organic compounds (SVOCs) were detected in samples from boring G-2 and G-3 and total petroleum hydrocarbons in the diesel range were detected in all samples. Of particular note are the TPH results from samples G-2 at 5.0', G-3 at 2.0', and G-3 at 5.0', which were reportedly 11,000, 3,400 and 3,100 ppm, respectively. It should be noted that due to matrix interference associated with petroleum hydrocarbons, the method reporting limits in all SVOC samples were elevated.

Note that because the TPH analysis were conducted in an effort to evaluate matrix interference in the SVOC samples, they were analyzed outside of the 14 day holding time. These data are nonetheless indicative of site conditions.

Table 1
Summary of Total Metals Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Station Number:	G-1	G-1	G-2	G-2	G-3	G-3	G-4	G-4
Sample Depth:	2'	5'	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte								
Silver (Ag)	0.1	< 0.1	0.3	0.1	< 0.1	< 0.1	0.1	0.2
Arsenic (As)	5	2	28	5	3	4	< 1	5
Cadmium (Cd)	< 0.1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium (Cr)	170	110	27	11	15	17	190	190
Copper (Cu)	44	24	31	24	19	24	55	54
Nickel (Ni)	270	150	31	19	30	26	300	280
Lead (Pb)	6	5	160	120	150	190	5	8
Selenium (Se)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Zinc (Zn)	59	42	240	160	59	95	59	69

NOTES:
Concentrations in mg/kg or parts per million (ppm).
Analytical method EPA series 6000 and 7000.

Revision 8/31/94

TABLES

Table 2
Summary of Volatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-1	G-1	G-2	G-2	G-3	G-3
Sample Depth:	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte						
Acetone	< 100	< 500	< 100	< 100000	< 5000	< 5000
Benzene	< 5	< 30	< 5	< 5000	< 300	< 300
Bromodichloromethane	< 5	< 30	< 5	< 5000	< 300	< 300
Bromoform	< 5	< 30	< 5	< 5000	< 300	< 300
Bromomethane	< 10	< 50	< 10	< 10000	< 300	< 500
2-Butanone (MEK)	< 100	< 500	< 100	< 100000	< 5000	< 5000
Carbon Disulfide	< 10	< 50	< 10	< 10000	< 500	< 500
Carbon Tetrachloride	< 5	< 30	< 5	< 5000	< 300	< 300
Chlorobenzene	< 5	< 30	< 5	< 5000	< 300	< 300
Chloroethane	< 10	< 50	< 10	< 10000	< 500	< 500
2-Chloroethylvinyl ether	< 10	< 50	< 10	< 10000	< 500	< 500
Chloroform	< 5	< 30	< 5	< 5000	< 300	< 300
Chloromethane	< 10	< 50	< 10	< 10000	< 500	< 500
Dibromochloromethane	< 5	< 30	< 5	< 5000	< 300	< 300
1,1-Dichloroethane	< 5	< 30	< 5	< 5000	< 300	< 300
1,2-Dichloroethane	< 5	< 30	< 5	< 5000	< 300	< 300
1,1-Dichloroethene	< 5	< 30	< 5	< 5000	< 300	< 300
cis -1,2-Dichloroethene	< 5	< 30	< 5	< 5000	< 300	< 300
trans -1,2-Dichloroethene	< 5	< 30	< 5	< 5000	< 300	< 300
1,2-Dichloropropane	< 5	< 30	< 5	< 5000	< 300	< 300
cis -1,3-Dichloropropene	< 5	< 30	< 5	< 5000	< 300	< 300
trans -1,3-Dichloropropene	< 5	< 30	< 5	< 5000	< 300	< 300
Ethylbenzene	< 5	< 30	< 5	200000	< 300	1600
2-Hexanone	< 50	< 300	< 50	< 50000	< 3000	< 3000
Methylene Chloride	< 10	< 90	< 20	< 5000	< 300	< 300
4-Methyl-2-Pentanone (MIBK)	< 50	< 300	< 50	< 50000	< 3000	< 3000
Styrene	< 5	< 30	< 5	< 5000	< 300	< 300
1,1,2,2-Tetrachloroethane	< 5	< 30	< 5	< 5000	< 300	< 300
Tetrachloroethene	< 5	< 30	< 5	< 5000	< 300	< 300
Toluene	< 5	< 30	< 5	78000	< 300	< 300
1,1,1-Trichloroethane	< 5	< 30	< 5	< 5000	< 300	< 300
1,1,2-Trichloroethane	< 5	< 30	< 5	< 5000	< 300	< 300
Trichloroethene	< 5	< 30	< 5	< 5000	< 300	< 300
Vinyl Acetate	< 50	< 300	< 50	< 50000	< 3000	< 3000
Vinyl Chloride	< 10	< 50	< 10	< 10000	< 500	< 500
Xylenes, total	< 10	67	< 10	3500000	< 500	800

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8240.

Table 2
Summary of Volatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-4	G-4
Sample Depth:	2'	5'
Sample Date:	7/26/94	7/26/94
Analyte		
Acetone	< 100	< 100
Benzene	< 5	< 5
Bromodichloromethane	< 5	< 5
Bromoform	< 5	< 5
Bromomethane	< 10	< 10
2-Butanone (MEK)	< 100	< 100
Carbon Disulfide	< 10	< 10
Carbon Tetrachloride	< 5	< 5
Chlorobenzene	< 5	< 5
Chloroethane	< 10	< 10
2-Chloroethylvinyl ether	< 10	< 10
Chloroform	< 5	< 5
Chloromethane	< 10	< 10
Dibromochloromethane	< 5	< 5
1,1-Dichloroethane	< 5	< 5
1,2-Dichloroethane	< 5	< 5
1,1-Dichloroethene	< 5	< 5
cis-1,2-Dichloroethene	< 5	< 5
trans-1,2-Dichloroethene	< 5	< 5
1,2-Dichloropropane	< 5	< 5
cis-1,3-Dichloropropene	< 5	< 5
trans-1,3-Dichloropropene	< 5	< 5
Ethylbenzene	29	< 5
2-Hexanone	< 50	< 50
Methylene Chloride	< 20	< 30
4-Methyl-2-Pentanone (MIBK)	< 50	< 50
Styrene	< 5	< 5
1,1,2,2-Tetrachloroethane	< 5	< 5
Tetrachloroethene	< 5	< 5
Toluene	< 5	< 5
1,1,1-Trichloroethane	< 5	< 5
1,1,2-Trichloroethane	< 5	< 5
Trichloroethene	< 5	< 5
Vinyl Acetate	< 50	< 50
Vinyl Chloride	< 10	< 10
Xylenes, total	< 10	13

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8240.

Table 3
Summary of Semivolatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-1	G-1	G-2	G-2	G-3	G-3
Sample Depth:	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte						
Acenaphthene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Acenaphthylene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Anthracene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzidine	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
Benzoic Acid	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
Benzo(a)anthracene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzo(b)fluoranthene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzo(k)fluoranthene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzo(g,h,i)perylene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzo(a)pyrene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Benzyl Alcohol	< 660	< 660	< 6600	< 2600	< 66000	< 6600
Bis(2-chloroethyl)ether	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Bis(2-chloroisopropyl)ether	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Bis(2-ethylhexyl)phthalate	< 1600	< 1600	< 3300	< 1300	< 160000	< 3300
4-Bromophenyl phenyl ether	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Butylbenzyl phthalate	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4-Chloroaniline	< 660	< 660	< 6600	< 2600	< 66000	< 6600
2-Chloronaphthalene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4-Chlorophenyl phenyl ether	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Chrysene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Dibenzo(a,h)anthracene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Dibenzofuran	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Di-n-butylphthalate	< 330	< 330	< 3300	< 1300	< 33000	< 3300
1,2-Dichlorobenzene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
1,3-Dichlorobenzene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
1,4-Dichlorobenzene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
3,3'-Dichlorobenzidine	< 660	< 660	< 6600	< 2600	< 66000	< 6600
Diethylphthalate	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Dimethylphthalate	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,4-Dinitrotoluene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,6-Dinitrotoluene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Di-n-octylphthalate	< 330	< 330	< 3300	< 1300	< 33000	< 3300
1,2-Diphenylhydrazine	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Fluoranthene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Fluorene	< 330	< 330	< 3300	< 1300	< 33000	< 3300

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8270.

Table 3
Summary of Semivolatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-1	G-1	G-2	G-2	G-3	G-3
Sample Depth:	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte						
Hexachlorobenzene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Hexachlorobutadiene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Hexachlorocyclopentadiene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Hexachloroethane	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Indeno(1,2,3-cd)pyrene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Isophorone	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2-Methylnaphthalene	< 330	< 330	< 3300	**6700**	< 33000	**3600**
Naphthalene	< 330	< 330	< 3300	**7800**	< 33000	**16000**
2-Nitroaniline	< 330	< 330	< 3300	< 1300	< 33000	< 3300
3-Nitroaniline	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
4-Nitroaniline	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
Nitrobenzene	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
N-Nitrosodimethylamine	< 330	< 330	< 3300	< 1300	< 33000	< 3300
N-Nitrosodiphenylamine	< 330	< 330	< 3300	< 1300	< 33000	< 3300
N-Nitrosodi-n-propylamine	< 330	< 330	< 3300	< 1300	< 33000	< 3300
Phenanthrene	< 330	< 330	< 3300	**3600**	< 33000	< 3300
Pyrene	< 330	< 330	< 3300	**1400**	< 33000	< 3300
1,2,4-Trichlorobenzene	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4-Chloro-3-methylphenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2-Chlorophenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,4-Dichlorophenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,4-Dimethylphenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4,6-Dinitro-2-methylphenol	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
2,4-Dinitrophenol	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
2-Methylphenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4-Methylphenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2-Nitrophenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
4-Nitrophenol	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
Pentachlorophenol	< 1600	< 1600	< 16000	< 6400	< 160000	< 16000
Phenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,4,5-Trichlorophenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300
2,4,6-Trichlorophenol	< 330	< 330	< 3300	< 1300	< 33000	< 3300

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8270.

Table 3
Summary of Semivolatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-4	G-4
Sample Depth:	2'	5'
Sample Date:	7/26/94	7/26/94
Analyte		
Acenaphthene	< 3300	< 3300
Acenaphthylene	< 3300	< 3300
Anthracene	< 3300	< 3300
Benzidine	< 16000	< 16000
Benzoic Acid	< 16000	< 16000
Benzo(a)anthracene	< 3300	< 3300
Benzo(b)fluoranthene	< 3300	< 3300
Benzo(k)fluoranthene	< 3300	< 3300
Benzo(g,h,i)perylene	< 3300	< 3300
Benzo(a)pyrene	< 3300	< 3300
Benzyl Alcohol	< 6600	< 6600
Bis(2-chloroethyl)ether	< 3300	< 3300
Bis(2-chloroisopropyl)ether	< 3300	< 3300
Bis(2-ethylhexyl)phthalate	< 3300	< 3300
4-Bromophenyl phenyl ether	< 3300	< 3300
Butylbenzyl phthalate	< 3300	< 3300
4-Chloroaniline	< 6600	< 6600
2-Chloronaphthalene	< 3300	< 3300
4-Chlorophenyl phenyl ether	< 3300	< 3300
Chrysene	< 3300	< 3300
Dibenzo(a,h)anthracene	< 3300	< 3300
Dibenzofuran	< 3300	< 3300
Di-n-butylphthalate	< 3300	< 3300
1,2-Dichlorobenzene	< 3300	< 3300
1,3-Dichlorobenzene	< 3300	< 3300
1,4-Dichlorobenzene	< 3300	< 3300
3,3'-Dichlorobenzidine	< 6600	< 6600
Diethylphthalate	< 3300	< 3300
Dimethylphthalate	< 3300	< 3300
2,4-Dinitrotoluene	< 3300	< 3300
2,6-Dinitrotoluene	< 3300	< 3300
Di-n-octylphthalate	< 3300	< 3300
1,2-Diphenylhydrazine	< 3300	< 3300
Fluoranthene	< 3300	< 3300
Fluorene	< 3300	< 3300

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8270.

Table 3
Summary of Semivolatile Organic Compounds Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-4	G-4
Sample Depth:	2'	5'
Sample Date:	7/26/94	7/26/94
Analyte		
Hexachlorobenzene	< 3300	< 3300
Hexachlorobutadiene	< 3300	< 3300
Hexachlorocyclopentadiene	< 3300	< 3300
Hexachloroethane	< 3300	< 3300
Indeno(1,2,3-cd)pyrene	< 3300	< 3300
Isophorone	< 3300	< 3300
2-Methylnaphthalene	< 3300	< 3300
Naphthalene	< 3300	< 3300
2-Nitroaniline	< 3300	< 3300
3-Nitroaniline	< 16000	< 16000
4-Nitroaniline	< 16000	< 16000
Nitrobenzene	< 16000	< 16000
N-Nitrosodimethylamine	< 3300	< 3300
N-Nitrosodiphenylamine	< 3300	< 3300
N-Nitrosodi-n-propylamine	< 3300	< 3300
Phenanthrene	< 3300	< 3300
Pyrene	< 3300	< 3300
1,2,4-Trichlorobenzene	< 3300	< 3300
4-Chloro-3-methylphenol	< 3300	< 3300
2-Chlorophenol	< 3300	< 3300
2,4-Dichlorophenol	< 3300	< 3300
2,4-Dimethylphenol	< 3300	< 3300
4,6-Dinitro-2-methylphenol	< 16000	< 16000
2,4-Dinitrophenol	< 16000	< 16000
2-Methylphenol	< 3300	< 3300
4-Methylphenol	< 3300	< 3300
2-Nitrophenol	< 3300	< 3300
4-Nitrophenol	< 16000	< 16000
Pentachlorophenol	< 16000	< 16000
Phenol	< 3300	< 3300
2,4,5-Trichlorophenol	< 3300	< 3300
2,4,6-Trichlorophenol	< 3300	< 3300

NOTES:
Concentrations in µg/kg or parts per billion (ppb).
Analytical method EPA 8270.

Table 4
Summary of Total Organic Carbon Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-1	G-1	G-2	G-2	G-3	G-3	G-4	G-4
Sample Depth:	2'	5'	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte								
Total Organic Carbon	**1300**	**980**	**2500**	**11000**	**5900**	**2200**	**2200**	**5000**

NOTES:
Concentrations in mg/kg or parts per million (ppm).
Analytical method EPA 415.1

Revision 8/31/94

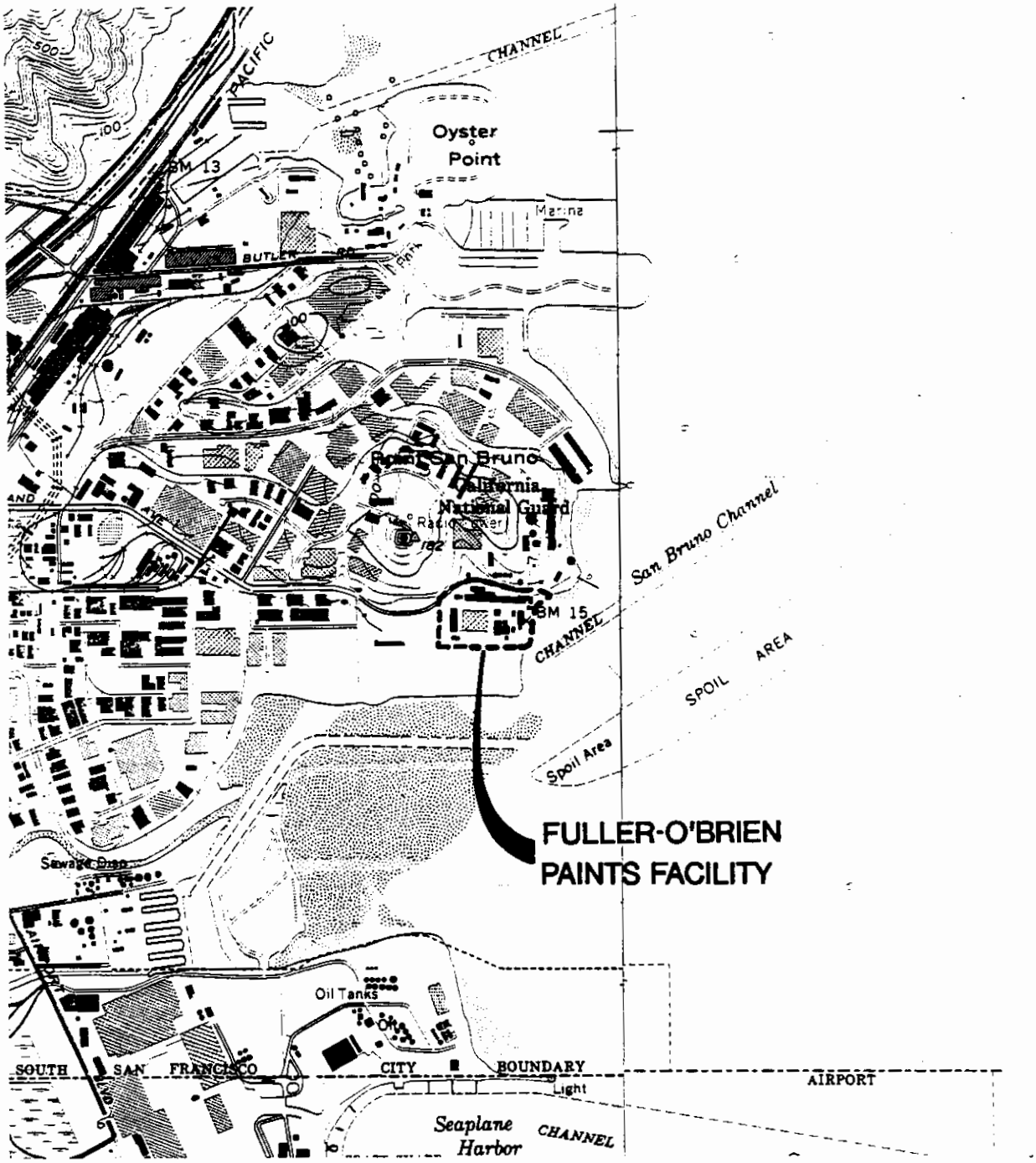
Table 5
Summary of Total Petroleum Hydrocarbons Analytical Results
for Soil Samples
Due Diligence
Fuller-O'Brien Paints
450 East Grand Avenue
South San Francisco, California

Sample Station:	G-1	G-1	G-2	G-2	G-3	G-3	G-4	G-4
Sample Depth:	2'	5'	2'	5'	2'	5'	2'	5'
Sample Date:	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94	7/26/94
Analyte								
TPH as Diesel	4	9	26	11000	3400	3100	2	2
TPH as Oil	< 5	85	200	12000	130	430	20	< 5

NOTES:
Concentrations in mg/kg or parts per million (ppm).
Analytical method EPA 3550/GC-FID.

Revision 9/6/94

FIGURES



BASE: U.S.G.S., SOUTH SAN FRANCISCO QUADRANGLE, 7.5 MINUTE SERIES, DATED 1980

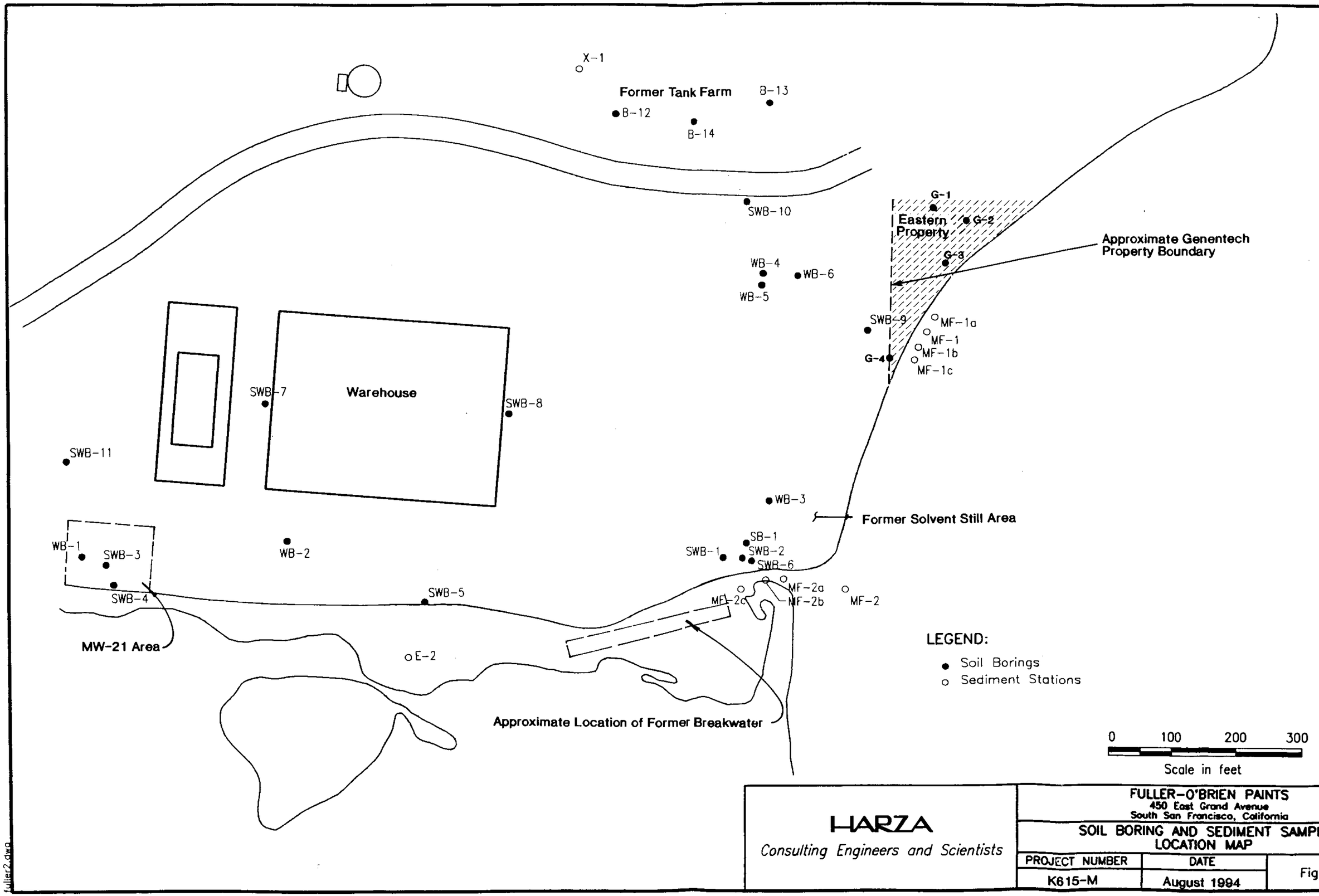
HARZA

Consulting Engineers and Scientists

FULLER-O'BRIEN PAINTS
450 East Grand Avenue
South San Francisco, California

SITE LOCATION MAP

PROJECT NO.	DATE	
K615M	August 1994	Figure 1



HARZA

Consulting Engineers and Scientists

FULLER-O'BRIEN PAINTS
450 East Grand Avenue
South San Francisco, California

SOIL BORING AND SEDIMENT SAMPLE LOCATION MAP

PROJECT NUMBER	DATE	
K615-M	August 1994	Figure 2

fuller2.dwg

APPENDIX A

APPENDIX A

Phase I/II Environmental Site Assessment, Marine Magnesium Company/Merck Site, prepared on April 20, 1994 for Genetech, Inc. by Woodward-Clyde Consultants

removed by P Houle 12/5/95
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APPENDIX C
FIELD SAMPLING PLAN

PRIVILEGED AND CONFIDENTIAL

FIELD SAMPLING PLAN FOR THE PHASE I/II ENVIRONMENTAL SITE ASSESSMENT AT THE MARINE MAGNESIUM PRODUCTS PROPERTY AT 330 PT. SAN BRUNO BLVD. SO. SAN FRANCISCO, CA

Prepared for
Genentech

October 5, 1993

Woodward-Clyde

Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, California 94607-4014

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1.0
INTRODUCTION

This document represents the Field Sampling Plan (FSP) prepared by Woodward-Clyde Consultants (WCC) for the Phase IIA Environmental Site Assessment at the Marine Magnesium Products Company at 330 Point San Bruno Boulevard in South San Francisco, California.

This FSP describes the protocol to be followed during implementation of the Phase IA scope of work for the facility. Section 2.0 of this FSP presents a short site description and history. Section 3.0 describes the regional geology and hydrogeology. Section 4.0 presents the specific field protocol to be followed during this environmental assessment. Remaining sections (5.0 through 8.0) document decontamination procedures, the analytical plan requirements, sample custody, field documentation procedures, and equipment maintenance and calibration procedures. Planned field activities include surface and subsurface soil sampling, and an option to do Phase IIB groundwater monitoring well installation and sampling is presented. Section 9.0 presents references.

The data obtained from these activities will be used to refine our understanding of the environmental conditions at the site and to evaluate the extent of contamination at the site to develop future remedial actions. Field activities and analytical results will ultimately be documented in a Phase I/II Environmental Assessment Report. The objectives and scope of each proposed component of this investigation are presented in the corresponding sections of this FSP.

2.0
SITE DESCRIPTION AND HISTORY

The Merck site is in South San Francisco on the southeastern tip of Point San Bruno overlooking San Francisco Bay (Figure 1). The site is located at 330 Point San Bruno Boulevard immediately adjacent to and south of the Genentech, Inc. corporate offices and research facilities (Engineering-Science 1987) and as shown on Figure 2 is surrounded on one side by the San Francisco Bay and on the other side by industrial properties.

(Need Page 2 (ES 1987)

In the initial stages of development, the parcel was purchased by Catalytic Chemical Company in 1919 from the South San Francisco Land and Development Company. Catalytic Chemical Company was a photochemical process plant. The types of materials manufactured at the facility included alkaloids, dyes, and medicinal preparations. According to the files of the South San Francisco Library Historical Room, the company had a period of down-time prior to 1922, when it reopened. It is unknown at the time of this printing, exactly when the Catalytic Chemical Company ceased operations. Files suggest that the company no longer operated in 1929, however it is shown on 1930 business maps (Mark Group, Fill Characterization Report 1988).

The process used in 1927 is still much the same as it is today, seawater is purified by treating it with chlorine and lime and then filtering. The magnesium is precipitated as magnesium hydroxide, which can then be dried, carbonated or calcined. The main products are powders for milk of magnesia, basic magnesium carbonate and magnesium oxide.

Page for Figure 2-2

3.0
REGIONAL GEOLOGY/HYDROLOGY

3.1 REGIONAL GEOLOGY

Point San Bruno is the southeastern extension of San Bruno Mountain, a massive block of Franciscan Formation rocks uplifted along the Hillside fault which trends diagonally from northwest to southeast across the San Francisco peninsula (Jennings 1961). Rocks of the Franciscan Formation are a heterogeneous assemblage of sandstone, graywacke, shale, chert, limestone, and assorted volcanics, gabbro and serpentine, initially deposited on the floor of the Pacific Ocean, then scraped into a trench and accreted onto the edge of the westwardly drifting continent about 100 million years ago. Because of its depositional and accretionary history, the rocks are intensely sheared, fractured, and folded. They vary greatly in both appearance and physical properties over short distances (Baily 1964).

Although susceptible to slope failure wherever dominated by interbedded clay layers, Franciscan Formation outcrops such as at Point San Bruno are favored for construction purposes due to their relative stability during earthquakes. Point San Bruno is located four miles northeast of the San Andreas fault which is capable of generating an earthquake of Richter scale magnitude 8 or higher (Berlin 19__). Other nearby active faults include the Hayward fault 15 miles to the northeast and the San Gregorio fault 11 miles to the southwest (Howard 1979). The hillside fault along the southwestern lank of San Bruno Mountain is not generally considered active.

Much of the originally uneven surface of the steep and rocky site, particularly along the southern margin where the main factory was constructed, was cut and filled with silts and clays of apparently local origin. Artificial fill material consisting of assorted rubble of unknown origin was also emplaced along the southern bluff overlooking the shoreline of San Francisco Bay to the south.

4.0
FIELD INVESTIGATION - FIELD PROCEDURES

The following Phase IIA activities will be performed at the MMC property east of O'Brien:

- Six surface soil samples (1/2 foot) will be collected with a hand trowel in order to evaluate potential surface soil/fill conditions;

- Six near-surface soil samples (3 feet) and 2 near-surface soil samples (3 to 6 feet) will be collected with a stainless steel hand auger hand trowel in order to further evaluate potential surface soil contamination;

- Four groundwater grab samples will be collected from the bottom of the near-surface soil (3 to 6 feet), hand-auger borings to evaluate groundwater conditions;

Additionally, the following Phase IIA activities will be conducted within the MMC operating facility:

- Two near-surface soil samples will be collected (3 feet) at the waste oil and D-Bar waste oil above ground tanks; and

- Soil gas samples from seven locations will be collected to evaluate the potential migration of contaminants;

The results of Phase IA activities will be evaluated as to indications of subsurface soil or groundwater contamination. If subsurface contamination is evidenced by Phase IA field activities, Phase IIA field activities will be required. The following Phase IIA field activities will be required. The following Phase IIA field activities are suggested for the MMC Operating Facility property.

- Nine borings may be installed in the soil gas survey locations. Four samples will be collected from each boring from 1, 5, 10, and 15 feet.

Page for Figure 4-1

Page for Table

3. Record the location of the sample on the site base map. Document sample locations in field log book.

4. Use a properly decontaminated hand trowel to collect the sample as described in Section 5.0.

5. Remove vegetation from the sampling location and retain cuttings from the 0- to 6 inch interval.

6. Fill the sample containers with soil collected from the appropriate interval. Return leftover material to the boring.

7. Document all sampling activities performed at each location using the procedures in Section 6.0. Complete the chain-of-custody form.

8. Clean or wipe down the outside of sample containers, as necessary.

4.2 GROUNDWATER SAMPLING

4.2.1 Work Plan Elements

From the six surface and near-surface soil sample locations, a total of four groundwater grab samples will collected. These samples are taken to evaluate the conditions of the groundwater and potential shallow groundwater contamination. These samples will be collected at the bottom of the hand auger boring at approximately three to six feet below the ground surface. In the event that groundwater samples cannot be collected in a surface and near-surface soil sample location, the boring may be relocated and the groundwater grab sample may be collected.

4.2.2 Groundwater Grab Sample Procedures

The four groundwater grab samples will be collected using the following procedures:

- Empty, Clean Waste Oil Above Ground Storage Tank (1 sample)
- Manufacturing Building Septic Sump (1 sample)
- Laboratory Sewage Lift Station (1 sample)

With the exception of the former laboratory location, these soil gas survey points are located in the paved areas of the facility, and will require a subcontractor to core through the concrete or asphalt. The soil gas survey locations will be pre-screened by an underground utility subcontractor prior to coring. At each location, one steel gas probe equipped with a retractable tip will be advanced into the ground using an electric jack hammer. These probes are designed to reach depths of approximately 15 feet below the surface in normally consolidated soil materials. Once the probe has reached the required depth, the tip will be retracted using the back-up system of the jack hammer. The gas sample may be collected as described below.

4.3.2 Soil Gas Survey Sampling Procedures

A single sample will be extracted from the vapor collected in the soil gas probe using a "bomb", a vacuum sample collection container. This method allows extraction of the soil gas sample using negative pressure, and provides increased sample retention times. At each of the soil gas sampling locations the following sampling procedure will be used:

- Each location will be pre-approved by the MMC representative and WCC project manager.

- The pre-approved location of the soil gas survey point will be cleared by the underground utility subcontractor. A concrete or asphalt core will be bored at the sample location.

- All mechanical sampling equipment that will be coming into contact with the soils and gas samples will be decontaminated prior to sampling, between sampling locations, and at the completion of each sample location.

MMC operating facility property, up to nine boring locations would be selected; and on the MMC property east of O'Brien, up to six borings would be selected.

The data collected during the installation of the borings will be used to evaluate the horizontal and vertical extent of onsite soil/fill conditions, the potential migration of contaminants, and the possible remedial alternatives.

Four soil samples will be collected from each deep boring from varying depths in the vadose zone (approximately 1.0 feet, 5 feet, 10 feet, and 15 feet). Each soil sample would be analyzed for volatile organics (EPA 82460), extractable organics (EPA 8270), total petroleum oil and grease by IR (EPA 418.1), metals (EPA 6010/7000 series) dissolved metals, and pH (EPA 9045). The methods EPA 8240 and 8015 mod may be replaced with the "fuel fingerprint" method (EPA 8260).

4.4.2 Subsurface Soil Sampling Procedures

Subsurface soil sampling boring locations will be selected as a result of Phase IIA activities. At each location, borings will be advanced by hollow stem augers. Boring and soil sampling procedures are described below.

1. A truck-mounted drill rig will be used to advance the hollow stem auger. Set up drilling equipment and exclusion zone, as specified in the site Health and Safety Plan.

2. All mechanical and manual drilling and sampling equipment (i.e., augers, split-spoons) coming into contact with site soils will be decontaminated prior to sampling, between sampling locations, and at the completion of work using the procedures outlined in Section 5.0.

3. Store decontaminated equipment on clean, polyethylene sheeting or wrapped in aluminum foil or plastic bags between uses. Following decontamination, do not allow sampling equipment to touch the ground prior to use.

- Borings to collect soil samples will be performed in accordance with Section 4.4.2.

- All well materials will be decontaminated prior to placement.

- The borings for monitoring well installation will be drilled with 8-inch (outer diameter) hollow stem augers. The internal diameter of the auger will be large enough to facilitate installation of a 2-inch monitoring well.

- Each boring will be drilled at least 5 feet into the first saturated zone.

- After reaching total depth in each well bore, well construction materials will be emplaced through the center of the hollow stem auger. Well materials will consist of 2-inch diameter, flush threaded, Schedule 40 polyvinylchloride (PVC) solid well casing. The well screen will consist of flush threaded PVC pipe with 0.01-inch slots. Screen intervals will be determined in the field.

- The top of the screen at each well location will be placed straddling the top of the water table. This will allow capture of potential floating material on groundwater at time of sampling.

- The annulus will be backfilled with 20/40 Silica sand to a level approximately 2 to 3 feet above the screened section. A hydrated bentonite pellet environmental seal will be placed above the sand, then a cement grout mixture will be placed above the environmental seal.

- Each monitoring well will be surveyed for elevation by a licensed engineering surveyor. The north rim of the top of casing at each well will be surveyed to an accuracy of 0.01 foot. The north rim of the casing will be notched or marked permanently. Several locations along the drainage ditch will also be surveyed (approximate spacing of 50 feet).

4.5.3 Monitoring Well Development and Sampling Procedures

Well development will commence no sooner than 24 hours after well completion. The wells will be developed by overpumping.

4.5.3.1 Monitoring Well Development Procedures

Monitoring wells will be developed according to the following procedures:

- Wells will be purged by either pumping or bailing.

- During purging, general water quality parameters (pH, specific conductance, temperature) will be periodically measured and recorded. Water color and turbidity were observed and recorded.

- Purging will continue until a minimum of five casing volumes of water are removed and water quality parameters stabilize.

- Teflon sampling bailers will be rinsed three times with distilled or deionized water, followed by three rinses with well water.

- Groundwater samples will be collected and poured into appropriate sample containers. Field preservatives will be added to the sample containers, as necessary. Sample containers will be sealed, labeled, wrapped in cushioned wrapping, and then placed in a chilled cooler for shipment to the analytical laboratory.

- After sampling, general water quality parameters, water level, and total depth will again measured and recorded.

Water removed from the wells during purging will be contained in a tank pending analysis for treatment or disposal.

Immediately following sample collection, the sample bottles will be placed in a chilled cooler for storage and transport to the analytical laboratory. All groundwater samples collected were recorded on chain-of-custody forms prior to shipment to the laboratory.

The groundwater samples will be analyzed for the full suite of potential contaminants of concern including chlorinated and organophosphorus pesticides (EPA Method 8080 and 8140), chlorinated herbicides (EPA Method 8150), volatile and semi-volatile organics (EPA Methods 8240 and 8270) and lead and arsenic (EPA Methods 7421 and 7060).

5.0
DECONTAMINATION PROCEDURES

Decontamination of personnel and equipment will be performed to minimize potential for sample contamination and to limit the transport of contaminants off-site and between work areas. Personnel decontamination protocol is discussed in the Health and Safety Plan. All sampling equipment coming in contact with soil and groundwater will be decontaminated prior to sampling, between sampling locations, and at completion of the work.

Decontamination of equipment will occur in the exclusion zone of the intrusive activities and at a main decontamination station. Small sampling and field equipment will be cleaned at the exclusion zone, while a central decontamination station will be established for cleaning of augers, drilling bits, large tools, drill rig, monitoring well supplies, and other large items.

Small equipment will be decontaminated using the following procedures:

- Scrub with brush using Alconox soap (or its equal) and potable water solution;
- Heavy rinse with potable water; and
- Distilled water rinse.

Decontaminated equipment will be stored on clean polyethylene sheeting or wrapped in aluminum foil or plastic bags between uses. Following decontamination, the sampling equipment will not be allowed to touch the ground surface prior to use.

Large equipment will be decontaminated using the procedure outlined below:

- Move equipment to decontamination station after sampling/field activities are complete.

6.0
SAMPLE CUSTODY PROTOCOLS AND FIELD DOCUMENTATION

6.1 CHAIN OF CUSTODY

The possession of samples will be traceable from the time of collection through shipment via an overnight courier, analysis by the laboratory and disposal. To maintain and document sample possession, chain-of-custody procedures will be followed. A chain-of-custody record will be filled out at the time of sample collection. This record will include the following information:

- Project name and number;
- Sampler's name(s);
- Sample identification number;
- Date of collection;
- Number and types of containers; and
- Required analyses.

Samples will be accompanied by the chain-of-custody record at all times. When transferring possession of the samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the record, with the exception that a delivery service (e.g., Federal Express) will be identified by company name only. Additionally, physical possession will be retained by the person assigned to the samples until they are shipped to the laboratory or placed in a locked storage facility. A copy of each chain-of-custody record will be maintained in the field project file. The original chain-of-custody record will accompany the sample to the analytical laboratory and will be returned to WCC with the analytical results.

memory. The field logbook will consist of a bound book with consecutively numbered pages and will be kept by personnel involved in the field activities.

The cover of the book will contain the following:

- WCC project name and number;
- Book number;
- Start date; and
- Stop date.

Entries will be made daily and, at a minimum, will consist of the following:

- Date;
- Start Time;
- Weather;
- Field personnel present;
- Level of personnel protection used;
- Type of activity conducted;
- Sample location;
- Sample identification number;
- Description of sampling point;
- Method of sampling;
- Type of sample;
- Pertinent field observations;

7.0
QUALITY ASSURANCE/QUALITY CONTROL OBJECTIVES

The overall Quality Assurance/Quality Control (QA/QC) objectives of this investigation are to assure that sampling, field and laboratory chain-of-custody, laboratory analyses, field and laboratory data measurement, and reporting will provide data to a degree of quality consistent with their intended use. The data resulting from sample collection and analysis and other sources should provide the information necessary to allow the preparation of a report(s) based on data which are accurate, precise, and representative. The investigation will not be considered invalid if the criteria are not fully achieved but variances will trigger QA/QC measures to evaluate, and correct if necessary, any problem areas. These QA/QC measures are discussed in the Quality Assurance Project Plan (QAPP).

Analytical data should represent the sample analyzed regardless of the heterogeneity of the original sample matrix. Duplicate samples and field blanks will be collected as a means to assess field representativeness. The sampling sequence of the duplicates will be unknown to the analytical laboratory. Representativeness will also be maintained during the sampling effort by performing all sampling in compliance with the procedures described in this document.

Approximately 1 field duplicate and 1 field blank will be collected for every 10 water or soil samples obtained. Trip blanks will be shipped for analysis with each cooler containing samples for volatile organic analysis.

8.0
CALIBRATION AND MAINTENANCE PROCEDURES

The calibration and maintenance of instruments used to take measurements is an important aspect of the project's sampling program. As an activity which affects data quality, instrument calibration and maintenance will be performed in accordance with established procedures and by trained personnel. Laboratory equipment calibration will be performed according to method protocols.

8.1 FIELD INSTRUMENTS AND EQUIPMENT CALIBRATION

The calibration and general maintenance of field instruments is the responsibility of the Field Manager or designated personnel. A field logbook will be maintained to document calibration, maintenance, and status of all instruments used during the field investigation. The calibration record will contain, but not be limited to, the following information:

- Data and time of calibration;
- Type of equipment and identification number (such as serial number);
- Reference standard used for calibration;
- Name of person conducting the calibration; and
- Results of calibration performed.

The field equipment scheduled for use during the site assessment and the frequency of calibration and field maintenance will be per manufacturer's guidelines. Field calibration will be performed following the manufacturer's directions and using standard solutions. Operation manuals for each piece of equipment will be kept in the field by the Site Safety Officer or the Field Manager.

Equipment that fails calibration, becomes questionable or inoperable during use will be removed from service and segregated to prevent inadvertent utilization. The equipment will

9.0
REFERENCES

Jennings, Charles W. and John L. Burnett, Geologic Map of California, San Francisco Sheet. State of California, Dept. of Natural Resources, 1961.

Bailey, Edgar H., William P. Irwin and David L. Jones, USGS, Franciscan and Related Rocks, and Their Significance in the Geology of Western California, 1964. Publication.

Berlin, G. Lonnis, Earthquakes and the Urban Environment, Volume 1.

Howard, Arthur D., Geologic History of Middle California, 1979. Publisher.

Merck and Co., Inc., Jacobs Engineering Company, Marine Plant Site Preparation Grading Plan, 22 October 1964. (see Appendix L)

Calgon Corporation, reply to Genentech question 2g, 11 September 1987. (see Appendix L)

Calgon Corporation, reply to Genentech question 1, 11 September 1987. (see Appendix K)

APPENDIX D
LABORATORY ANALYTICAL REPORTS

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 9[illegible]0564 A

SAMPLERS: (Signature) [illegible]

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8260	EPA Method 8270	EPA Method 4181	EPA Method 6/7000							Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
10/11/[illegible]	[illegible]	S-1 (0.5')	S	X	X	X	X							1	
10/11/[illegible]	[illegible]	S-2 ([illegible])	S	X	X	X	X							1	
10/11/[illegible]	1000	S-2 ([illegible])	S	X	X	X	X							1	Results To: [illegible] Mozzanine
10/11/[illegible]	1030	S-3 (0.5')	S	X	X	X	X							1	
10/11/[illegible]	1100	S-4 (0.5')	S	X	X	X	X							1	
[illegible]	[illegible]	S-4 ([illegible])	S	X	X	X	X							1	

TOTAL NUMBER OF CONTAINERS: 6

RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)	RELINQUISHED BY : (Signature)	DATE/TIME	RECEIVED BY : (Signature)
[illegible]	10/11 1232	[illegible]			

METHOD OF SHIPMENT :	SHIPPED BY : (Signature)	COURIER : (Signature)	RECEIVED FOR LAB BY : (Signature)	DATE/TIME

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 93C0564A

SAMPLERS: (Signature)

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	ANALYSES: EPA Method TO-14	EPA Method	EPA Method	EPA Method							Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
10-11	1000	537	A	X										1	
"	1055	569	A	X										1	
"	1120	109	A	X										1	5-DAY TAT
"	1140	590	A	X										1	
"	1230	606	A	X										1	REPORT RESULTS TO JOE MORGAN

TOTAL NUMBER OF CONTAINERS: 5

JBC

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	10/11/1993 1220				

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
LAB COURIER				

AIR ANALYTICAL RESULTS

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-3
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #619	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	32.	77.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	2.7	8.0	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -5 in. Hg and pressurized to 17.50 psig with He.

11/09/93
MS1/1Y99J
GD/ge
MS1*A

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-3
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #619	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	0.4	1.4	
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Y99J
GD/ge
MS1*A

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-3
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #619	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	0.4	2.2	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			109.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Y99J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-4
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #483	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	18.	42.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	1.7	5.1	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -9 in. Hg and pressurized to 18.00 psig with He.

11/09/93
MS1/1Z01J
GD/ge
MS1*A

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-4
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #483	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	14.	61.	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	34.	130.	
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z01J
GD/ge
MS1*A

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-4
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #483	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	100.	440.	
Percent Surrogate Recovery			109.	
Total Fuel (non-methane hydrocarbons)	50.	170.	600.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z01J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: MS1*A CJ-4830-4
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED QC DUPLICATE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #483	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	%DIFF	NOTE
VOLATILE ORGANICS BY EPA TO-14					1,2
Acetone	1.	18.	42.	0.	
Benzene	0.2	ND	ND		
Bromodichloromethane	0.1	ND	ND		
Bromomethane (Methyl Bromide)	0.2	ND	ND		
Bromoform	0.1	ND	ND		
1,3-Butadiene	0.5	ND	ND		
2-Butanone (MEK)	0.2	1.7	5.0	2.	
Carbon Disulfide	2.	ND	ND		
Carbon Tetrachloride	0.2	ND	ND		
Chlorobenzene	0.1	ND	ND		
Chloroethane (Ethyl Chloride)	0.2	ND	ND		
2-Chloroethyl Vinyl Ether	1.	ND	ND		
Chloroform	0.5	ND	ND		
Chloromethane (Methyl Chloride)	0.2	ND	ND		
Dibromochloromethane	0.1	ND	ND		
1,2-Dibromoethane (EDB)	0.2	ND	ND		
1,2-Dichlorobenzene	0.2	ND	ND		
1,3-Dichlorobenzene	0.2	ND	ND		
1,4-Dichlorobenzene	0.2	ND	ND		
1,1-Dichloroethane	0.1	ND	ND		

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.
(2) Canister was received under vacuum at -9 in. Hg and pressurized to 18.00 psig with He.

11/09/93
MS1/1Z02J
GD/ge
CJ4830-4

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

QC Batch ID: MS1*A CJ-4830-4
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED QC DUPLICATE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
CAN #483	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	%DIFF	NOTE
1,2-Dichloroethane (EDC)	0.2	ND	ND		
1,1-Dichloroethene	0.2	ND	ND		
cis-1,2-Dichloroethene	0.2	ND	ND		
trans-1,2-Dichloroethene	0.2	ND	ND		
Dichloromethane	1.	ND	ND		
1,2-Dichloropropane	0.1	ND	ND		
cis-1,3-Dichloropropene	0.1	ND	ND		
trans-1,3-Dichloropropene	0.1	ND	ND		
Ethylbenzene	0.2	14.	61.	0.	
2-Hexanone	0.1	ND	ND		
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND		
Styrene	0.2	ND	ND		
1,1,2,2-Tetrachloroethane	0.1	ND	ND		
Tetrachloroethene (PCE)	0.1	ND	ND		
Toluene	0.2	34.	130.	0.	
1,1,1-Trichloroethane (TCA)	0.2	ND	ND		
1,1,2-Trichloroethane	0.2	ND	ND		
Trichloroethene (TCE)	0.1	ND	ND		
Trichlorofluoromethane (F-11)	0.2	ND	ND		
Trichlorotrifluoroethane (F-113)	0.2	ND	ND		
Vinyl Acetate	0.5	ND	ND		
Vinyl Chloride	0.2	ND	ND		
Xylenes	0.2	100.	440.	0.	
Percent Surrogate Recovery			108.		
Total Fuel (non-methane hydrocarbons)	50.	170.	600.	0.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018,
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z02J
GD/ge
CJ4830-4

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-5
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
CAN #474	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	51.	120.	
Benzene	0.2	0.6	1.8	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -9 in. Hg and pressurized to 16.00 psig with He.

11/09/93
MS1/1Z03J
GD/ge
MS1*A

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-5
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #474	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	1.3	8.9	
Toluene	0.2	2.1	7.9	
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z03J
GD/ge
MS1*A

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-5
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #474	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	0.7	3.2	
Percent Surrogate Recovery			108.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z03J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-6
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #454	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	11.	25.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	
1,2-Dichlorobenzene	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -6.5 in. Hg and pressurized to 18 psig with He.

11/09/93
MS1/1Z05J
GD/ge
MS1*A

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-6
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #454	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	0.5	1.9	
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z05J
GD/ge
MS1*A

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-6
Project : #93C0564A

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CAN #454	Air		10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			109.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
MS1/1Z05J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: YL
Method : EPA TO-14

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
INSTRUMENT BLANK	Air		

CONSTITUENT	(CAS RN)	*PQL µg/cu M	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1
Acetone	(67641)	3.	ND	
Benzene	(71432)	0.5	ND	
Bromodichloromethane	(75274)	1.	ND	
Bromomethane (Methyl Bromide)	(74839)	1.	ND	
Bromoform	(75252)	1.	ND	
1,3-Butadiene	(106990)	1.	ND	
2-Butanone (MEK)	(78933)	1.	ND	
Carbon Disulfide	(75150)	5.	ND	
Carbon Tetrachloride	(56235)	1.	ND	
Chlorobenzene	(108907)	0.5	ND	
Chloroethane (Ethyl Chloride)	(75003)	0.5	ND	
2-Chloroethyl Vinyl Ether	(110758)	5.	ND	
Chloroform	(67663)	3.	ND	
Chloromethane (Methyl Chloride)	(74873)	0.5	ND	
Dibromochloromethane	(124381)	1.	ND	
1,2-Dibromoethane (EDB)	(106934)	2.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
1,1-Dichloroethane	(75343)	0.5	ND	
1,2-Dichloroethane (EDC)	(107062)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

10/14/93
MS1/1Y69J
GD/ge
CJ9310-13

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: YL
Method : EPA TO-14

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Air			

CONSTITUENT	(CAS RN)	*PQL µg/cu M	RESULT µg/cu M	NOTE
1,1-Dichloroethene	(75354)	1.	ND	
cis-1,2-Dichloroethene	(156694)	1.0	ND	
trans-1,2-Dichloroethene	(156605)	1.	ND	
Dichloromethane	(75092)	5.	ND	
1,2-Dichloropropane	(78875)	0.5	ND	
cis-1,3-Dichloropropene	(10061015)	0.5	ND	
trans-1,3-Dichloropropene	(10061026)	0.5	ND	
Ethylbenzene	(100411)	1.	ND	
2-Hexanone	(591786)	0.5	ND	
4-Methyl-2-Pentanone (MIBK)	(108101)	0.5	ND	
Styrene	(100425)	1.	ND	
1,1,2,2-Tetrachloroethane	(79345)	1.	ND	
Tetrachloroethene (PCE)	(127184)	1.	ND	
Toluene	(108883)	1	ND	
1,1,1-Trichloroethane (TCA)	(71556)	1.	ND	
1,1,2-Trichloroethane	(79005)	1.	ND	
Trichloroethene (TCE)	(79016)	0.5	ND	
Trichlorofluoromethane (F-11)	(75694)	1.	ND	
Trichlorotrifluoroethane (F-113)	(76131)	2.	ND	
Vinyl Acetate	(108054)	2.	ND	
Vinyl Chloride	(75104)	0.5	ND	
Xylenes	(1330207)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/14/93
MS1/1Y69J
GD/ge
CJ9310-13

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Air			

CONSTITUENT	*PQL µg/cu M	SPIKE AMOUNT	RESULT µg/cu M	%REC	NOTE
VOLATILE ORGANICS BY EPA TO-14					1,2
Acetone	3.		NS		
Benzene	0.5	16.	15.	94.	
Bromodichloromethane	1.		NS		
Bromomethane (Methyl Bromide)	1.	21.	22.	105.	
Bromoform	1.		NS		
1,3-Butadiene	1.	10.	8.8	88.	
2-Butanone (MEK)	1.		NS		
Carbon Disulfide	5.		NS		
Carbon Tetrachloride	1.	31.	31.	100.	
Chlorobenzene	0.5	23.	22.	96.	
Chloroethane (Ethyl Chloride)	0.5		NS		
2-Chloroethyl Vinyl Ether	5.		NS		
Chloroform	3.	25.	23.	92.	
Chloromethane (Methyl Chloride)	0.5		NS		
Dibromochloromethane	1.		NS		
1,2-Dibromoethane (EDB)	2.	10.	7.8	78.	
1,2-Dichlorobenzene	1.		NS		
1,3-Dichlorobenzene	1.		NS		
1,4-Dichlorobenzene	1.		NS		
1,1-Dichloroethane	0.5		NS		

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.
(2) Zero Air spiked with NIST SRM 1804, Cylinder # ALM-000881.

10/14/93
MS1/1Y91J
GD/ge
CJ9310-13

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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: EJ
Method : EPA TO-14

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
QC SPIKE	Air		

CONSTITUENT	*PQL µg/cu M	SPIKE AMOUNT	RESULT µg/cu M	%REC	NOTE
1,2-Dichloroethane (EDC)	1.	20.	19.	95.	
1,1-Dichloroethene	1.		NS		
cis-1,2-Dichloroethene	1.0		NS		
trans-1,2-Dichloroethene	1.		NS		
Dichloromethane	5.	17.	16.	94.	
1,2-Dichloropropane	0.5	23.	22.	96.	
cis-1,3-Dichloropropene	0.5		NS		
trans-1,3-Dichloropropene	0.5		NS		
Ethylbenzene	1.	15.	15.	100.	
2-Hexanone	0.5		NS		
4-Methyl-2-Pentanone (MIBK)	0.5		NS		
Styrene	1.		NS		
1,1,2,2-Tetrachloroethane	1.		NS		
Tetrachloroethene (PCE)	1.	34.	35.	103.	
Toluene	1	18.	18.	100.	
1,1,1-Trichloroethane (TCA)	1.	28.	28.	100.	
1,1,2-Trichloroethane	1.		NS		
Trichloroethene (TCE)	0.5	27.	25.	93.	
Trichlorofluoromethane (F-11)	1.	29.	31.	107.	
Trichlorotrifluoroethane (F-113)	2.		NS		
Vinyl Acetate	2.		NS		
Vinyl Chloride	0.5	14.	13.	93.	
Xylenes	1.	15.	15.	100.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #101

* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit

10/14/93
MS1/1Y91J
GD/ge
CJ9310-13

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-3
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #109	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	25.	59.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	2.4	7.0	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -10 in. Hg and pressurized to 17.3 psig with He.

10/21/93
MS1/1Y51J
GD/ge
MS1*A

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-3
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #109	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	4.4	18.	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	1.1	4.3	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y51J
GD/ge
MS1*A

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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-3
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #109	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			104.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y51J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-1
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #537	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	110.	260.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	2.	6.2	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister received at 0 psig and pressurized to 15.8 psig with He.

10/21/93
MS1/1Y48J
GD/ge
MS1*A

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Lab Number : CJ-4794-1
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #537	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	0.5	2.0	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y48J
GD/ge
MS1*A

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Lab Number : CJ-4794-1
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #537	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			104.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y48J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-2
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #569	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	46.	110.	
Benzene	0.2	0.5	1.5	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	6.	19.	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -3.2 in. Hg and pressurized to 16.2 psig with He.

10/21/93
MS1/1Y50J
GD/ge
MS1*A

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Lab Number : CJ-4794-2
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #569	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	19.	130.	
Toluene	0.2	0.7	2.5	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y50J
GD/ge
MS1*A

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
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Lab Number : CJ-4794-2
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #569	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,1,1-Trichloroethane (TCA)	0.2	1.4	7.5	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			105.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y50J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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Lab Number : CJ-4794-4
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #590	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	8.	18.	
Benzene	0.2	0.5	1.5	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	

Lab Certifications: CARLAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -3.5 in. Hg and pressurized to 16.2 psig with He.

10/21/93
MS1/1Y52J
GD/ge
MS1*A

COAST-TO-COAST ANALYTICAL SERVICES

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Lab Number : CJ-4794-4
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #590	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	ND	ND	
Toluene	0.2	3.2	12.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y52J
GD/ge
MS1*A

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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Lab Number : CJ-4794-4
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #590	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,1,1-Trichloroethane (TCA)	0.2	0.4	2.4	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	1.7	9.4	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			103.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y52J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-5
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/12/93
Analyzed by: EJ
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #606	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1,2
Acetone	1.	15.	36.	
Benzene	0.2	ND	ND	
Bromodichloromethane	0.1	ND	ND	
Bromomethane (Methyl Bromide)	0.2	ND	ND	
Bromoform	0.1	ND	ND	
1,3-Butadiene	0.5	ND	ND	
2-Butanone (MEK)	0.2	ND	ND	
Carbon Disulfide	2.	ND	ND	
Carbon Tetrachloride	0.2	ND	ND	
Chlorobenzene	0.1	ND	ND	
Chloroethane (Ethyl Chloride)	0.2	ND	ND	
2-Chloroethyl Vinyl Ether	1.	ND	ND	
Chloroform	0.5	ND	ND	
Chloromethane (Methyl Chloride)	0.2	ND	ND	
Dibromochloromethane	0.1	ND	ND	
1,2-Dibromoethane (EDB)	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

(2) Canister was received under vacuum at -6 in. Hg and pressurized to 17 psig with He.

10/21/93
MS1/1Y53J
GD/ge
MS1*A

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-5
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: EJ
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #606	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,2-Dichlorobenzene	0.2	ND	ND	
1,3-Dichlorobenzene	0.2	ND	ND	
1,4-Dichlorobenzene	0.2	ND	ND	
1,1-Dichloroethane	0.1	ND	ND	
1,2-Dichloroethane (EDC)	0.2	ND	ND	
1,1-Dichloroethene	0.2	ND	ND	
cis-1,2-Dichloroethene	0.2	ND	ND	
trans-1,2-Dichloroethene	0.2	ND	ND	
Dichloromethane	1.	ND	ND	
1,2-Dichloropropane	0.1	ND	ND	
cis-1,3-Dichloropropene	0.1	ND	ND	
trans-1,3-Dichloropropene	0.1	ND	ND	
Ethylbenzene	0.2	ND	ND	
2-Hexanone	0.1	ND	ND	
4-Methyl-2-Pentanone (MIBK)	0.1	ND	ND	
Styrene	0.2	ND	ND	
1,1,2,2-Tetrachloroethane	0.1	ND	ND	
Tetrachloroethene (PCE)	0.1	7.1	48.	
Toluene	0.2	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y53J
GD/ge
MS1*A

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-5
Project : 93C0564 A

Analyzed : 10/12/93
Analyzed by: EJ
Method : EPA TO-14

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
Can #606	Air	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL ppbv	RESULT ppbv	RESULT µg/cu M	NOTE
1,1,1-Trichloroethane (TCA)	0.2	ND	ND	
1,1,2-Trichloroethane	0.2	ND	ND	
Trichloroethene (TCE)	0.1	ND	ND	
Trichlorofluoromethane (F-11)	0.2	ND	ND	
Trichlorotrifluoroethane (F-113)	0.2	ND	ND	
Vinyl Acetate	0.5	ND	ND	
Vinyl Chloride	0.2	ND	ND	
Xylenes	0.2	ND	ND	
Percent Surrogate Recovery			102.	
Total Fuel (non-methane hydrocarbons)	50.	ND	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/21/93
MS1/1Y53J
GD/ge
MS1*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai, Ph.D
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Air			

CONSTITUENT	(CAS RN)	*PQL µg/cu M	RESULT µg/cu M	NOTE
VOLATILE ORGANICS BY EPA TO-14				1
Acetone	(67641)	3.	ND	
Benzene	(71432)	0.5	ND	
Bromodichloromethane	(75274)	1.	ND	
Bromomethane (Methyl Bromide)	(74839)	1.	ND	
Bromoform	(75252)	1.	ND	
1,3-Butadiene	(106990)	1.	ND	
2-Butanone (MEK)	(78933)	1.	ND	
Carbon Disulfide	(75150)	5.	ND	
Carbon Tetrachloride	(56235)	1.	ND	
Chlorobenzene	(108907)	0.5	ND	
Chloroethane (Ethyl Chloride)	(75003)	0.5	ND	
2-Chloroethyl Vinyl Ether	(110758)	5.	ND	
Chloroform	(67663)	3.	ND	
Chloromethane (Methyl Chloride)	(74873)	0.5	ND	
Dibromochloromethane	(124381)	1.	ND	
1,2-Dibromoethane (EDB)	(106934)	2.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
1,1-Dichloroethane	(75343)	0.5	ND	
1,2-Dichloroethane (EDC)	(107062)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.

10/13/93
MS1/1Y36J
GD/ge
CJ9310-12

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/12/93
Analyzed by: YL
Method : EPA TO-14

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
INSTRUMENT BLANK	Air		

CONSTITUENT	(CAS RN)	*PQL µg/cu M	RESULT µg/cu M	NOTE
1,1-Dichloroethene	(75354)	1.	ND	
cis-1,2-Dichloroethene	(156694)	1.0	ND	
trans-1,2-Dichloroethene	(156605)	1.	ND	
Dichloromethane	(75092)	5.	ND	
1,2-Dichloropropane	(78875)	0.5	ND	
cis-1,3-Dichloropropene	(10061015)	0.5	ND	
trans-1,3-Dichloropropene	(10061026)	0.5	ND	
Ethylbenzene	(100411)	1.	ND	
2-Hexanone	(591786)	0.5	ND	
4-Methyl-2-Pentanone (MIBK)	(108101)	0.5	ND	
Styrene	(100425)	1.	ND	
1,1,2,2-Tetrachloroethane	(79345)	1.	ND	
Tetrachloroethene (PCE)	(127184)	1.	ND	
Toluene	(108883)	1	ND	
1,1,1-Trichloroethane (TCA)	(71556)	1.	ND	
1,1,2-Trichloroethane	(79005)	1.	ND	
Trichloroethene (TCE)	(79016)	0.5	ND	
Trichlorofluoromethane (F-11)	(75694)	1.	ND	
Trichlorotrifluoroethane (F-113)	(76131)	2.	ND	
Vinyl Acetate	(108054)	2.	ND	
Vinyl Chloride	(75104)	0.5	ND	
Xylenes	(1330207)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/13/93
MS1/1Y36J
GD/ge
CJ9310-12

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai, Ph.D.
Air Toxics Group Leader

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/12/93
Analyzed by: EJ
Method : EPA TO-14

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Air			

CONSTITUENT	*PQL µg/cu M	SPIKE AMOUNT	RESULT µg/cu M	%REC	NOTE
VOLATILE ORGANICS BY EPA TO-14					1,2
Acetone	3.		NS		
Benzene	0.5	16.	15.	94.	
Bromodichloromethane	1.		NS		
Bromomethane (Methyl Bromide)	1.	21.	20.	95.	
Bromoform	1.		NS		
1,3-Butadiene	1.	10.	9.5	95.	
2-Butanone (MEK)	1.		NS		
Carbon Disulfide	5.		NS		
Carbon Tetrachloride	1.	31.	33.	106.	
Chlorobenzene	0.5	23.	23.	100.	
Chloroethane (Ethyl Chloride)	0.5		NS		
2-Chloroethyl Vinyl Ether	5.		NS		
Chloroform	3.	25.	23.	92.	
Chloromethane (Methyl Chloride)	0.5		NS		
Dibromochloromethane	1.		NS		
1,2-Dibromoethane (EDB)	2.	10.	7.8	78.	
1,2-Dichlorobenzene	1.		NS		
1,3-Dichlorobenzene	1.		NS		
1,4-Dichlorobenzene	1.		NS		
1,1-Dichloroethane	0.5		NS		

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #101
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit
(1) Concentrations in ug/cu M reported at 760 mm Hg pressure and 298 deg. K.
(2) CNBS

10/13/93
MS1/1Y54J
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4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/12/93
Analyzed by: EJ
Method : EPA TO-14

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
QC SPIKE	Air		

CONSTITUENT	*PQL µg/cu M	SPIKE AMOUNT	RESULT µg/cu M	%REC	NOTE
1,2-Dichloroethane (EDC)	1.	20.	20.	100.	
1,1-Dichloroethene	1.		NS		
cis-1,2-Dichloroethene	1.0		NS		
trans-1,2-Dichloroethene	1.		NS		
Dichloromethane	5.	17.	17.	100.	
1,2-Dichloropropane	0.5	23.	22.	96.	
cis-1,3-Dichloropropene	0.5		NS		
trans-1,3-Dichloropropene	0.5		NS		
Ethylbenzene	1.	15.	16.	107.	
2-Hexanone	0.5		NS		
4-Methyl-2-Pentanone (MIBK)	0.5		NS		
Styrene	1.		NS		
1,1,2,2-Tetrachloroethane	1.		NS		
Tetrachloroethene (PCE)	1.	34.	37.	109.	
Toluene	1	18.	19.	106.	
1,1,1-Trichloroethane (TCA)	1.	28.	29.	104.	
1,1,2-Trichloroethane	1.		NS		
Trichloroethene (TCE)	0.5	27.	26.	96.	
Trichlorofluoromethane (F-11)	1.	29.	34.	117.	
Trichlorotrifluoroethane (F-113)	2.		NS		
Vinyl Acetate	2.		NS		
Vinyl Chloride	0.5	14.	14.	100.	
Xylenes	1.	15.	16.	107.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
* RESULTS listed as 'NS' were not spiked. PQL = Practical Quantitation Limit

10/13/93
MS1/1Y54J
GD/ge
CJ9310-12

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Gesheng Dai

Gesheng Dai, Ph.D.
Air Toxics Group Leader

SOILS LABORATORY REPORTS
pH

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ4794
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CJ4794-6	S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93
CJ4794-7	S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93
CJ4794-8	S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93
CJ4794-9	S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	UNITS	*PQL	CJ4794-6	CJ4794-7	CJ4794-8	CJ4794-9
pH	Units	0.1	7.8	8.0	8.5	8.0
Method:			EPA 9045	EPA 9045	EPA 9045	EPA 9045
Analyzed by:			GO	GO	GO	GO
Analyzed on:			10/26/93	10/26/93	10/26/93	10/26/93
Dilution Factor			1.0	1.0	1.0	1.0
Notes:			1	1	1	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS of 'ND' not detected at or above the listed PQL times Dilution Factor.
(1) Determined in 0.01M calcium chloride.

10/29/93

MH/mjv/rs

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ4794
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
CJ4794-10	S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93
CJ4794-11	S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	UNITS	*PQL	CJ4794-10	CJ4794-11
pH	Units	0.1	7.9	7.4
Method:			EPA 9045	EPA 9045
Analyzed by:			GO	RS
Analyzed on:			10/26/93	10/26/93
Dilution Factor			1.0	1.0
Notes:			1	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS of 'ND' not detected at or above the listed PQL times Dilution Factor.
(1) Determined in 0.01M calcium chloride.

10/29/93

MH/mjv/mav

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

SOIL ANALYTICAL RESULTS
VOLATILE ORGANICS BY GC/MS

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.54	
Dibromofluoromethane (Surrogate Percent Recovery)			108	
Toluene-d8 spike level		0.50	0.47	
Toluene-d8 (Surrogate Percent Recovery)			94.	
p-Bromofluorobenzene spike level		0.50	0.44	
p-Bromofluorobenzene (Surrogate Percent Recovery)			88.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropane	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
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Analyzed : 10/13/93
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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.52	
Dibromofluoromethane (Surrogate Percent Recovery)		50.	104.	
Toluene-d8 spike level		0.50	0.46	
Toluene-d8 (Surrogate Percent Recovery)			92.	
p-Bromofluorobenzene spike level		0.50	0.47	
p-Bromofluorobenzene (Surrogate Percent Recovery)			94.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-8
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

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(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

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Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	0.08	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.50	
Dibromofluoromethane (Surrogate Percent Recovery)		50.	100.	
Toluene-d8 spike level		0.50	0.48	
Toluene-d8 (Surrogate Percent Recovery)			96.	
p-Bromofluorobenzene spike level		0.50	0.47	
p-Bromofluorobenzene (Surrogate Percent Recovery)			94.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CJ47946286V

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
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Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

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Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.51	
Dibromofluoromethane (Surrogate Percent Recovery)		50.	102.	
Toluene-d8 spike level		0.50	0.47	
Toluene-d8 (Surrogate Percent Recovery)			94.	
p-Bromofluorobenzene spike level		0.50	0.47	
p-Bromofluorobenzene (Surrogate Percent Recovery)			94.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4794-10
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

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500 12th St. Ste. 100
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Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.54	
Dibromofluoromethane (Surrogate Percent Recovery)		50.	108.	
Toluene-d8 spike level		0.50	0.47	
Toluene-d8 (Surrogate Percent Recovery)			94.	
p-Bromofluorobenzene spike level		0.50	0.45	
p-Bromofluorobenzene (Surrogate Percent Recovery)			90.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

10/25/93
MSD7/BG762
MH/nz/jaf
CJ47946286V

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Analyzed : 10/13/93
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Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/25/93
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MH/nz/jaf
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Lab Number : CJ-4794-11
Project : 93C0564 A

CLIENT: Joe Morgan
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Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.52	
Dibromofluoromethane (Surrogate Percent Recovery)		50.	104.	
Toluene-d8 spike level		0.50	0.47	
Toluene-d8 (Surrogate Percent Recovery)			94.	
p-Bromofluorobenzene spike level		0.50	0.44	
p-Bromofluorobenzene (Surrogate Percent Recovery)			88.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/25/93
MSD7/BG762
MH/nz/jaf
CJ47946286V

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2,3
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8240 (GC/MS)

(3) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

11/09/93
DV1/14OCT05
MH/nz/das/qcp
CJ48131287V

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	
Hexachlorobutadiene	(87683)	0.01	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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11/09/93
DV1/14OCT05
MH/nz/das/qcp
CJ48131287V

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Lab Number : CJ-4830-1
Project : #93C0564A

CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	0.03	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.005	ND	
1,2,4-Trichlorobenzene	(120821)	0.005	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
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11/09/93
DV1/14OCT05
MH/nz/das/qcp
CJ48131287V

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.54	
Dibromofluoromethane (Surrogate Percent Recovery)			108.	
Toluene-d8 spike level		0.50	0.46	
Toluene-d8 (Surrogate Percent Recovery)			92.	
p-Bromofluorobenzene spike level		0.50	0.40	
p-Bromofluorobenzene (Surrogate Percent Recovery)			80.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT05
MH/nz/das/qcp
CJ48131287V

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2,3
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8240 (GC/MS)

(3) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

11/09/93
DV1/14OCT06
MH/nz/das/qcp
CJ48131287V

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Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	
Hexachlorobutadiene	(87683)	0.01	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT06
MH/nz/das/qcp
CJ48131287V

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

R E V I S E D
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.005	ND	
1,2,4-Trichlorobenzene	(120821)	0.005	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT06
MH/nz/das/qcp
CJ48131287V

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

REVISED
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.53	
Dibromofluoromethane (Surrogate Percent Recovery)			106	
Toluene-d8 spike level		0.50	0.45	
Toluene-d8 (Surrogate Percent Recovery)			90.	
p-Bromofluorobenzene spike level		0.50	0.41	
p-Bromofluorobenzene (Surrogate Percent Recovery)			82.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT06
MH/nz/das/qcp
CJ48131287V

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ48131287V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1,2,3
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) EXTRACTED by EPA 5030 (purge-and-trap)
(2) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8240 (GC/MS)
(3) Total Petroleum Hydrocarbons (Gasoline, Diesel 2, Jet fuel, Kerosene or Stoddard solvent) were not detected at the listed PQL.

11/09/93
DV1/14OCT04
MH/nz/das/qcp
CJ4830-1

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ48131287V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT04
MH/nz/das/qcp
CJ4830-1

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QC Batch ID: CJ48131287V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.005	ND	
1,2,4-Trichlorobenzene	(120821)	0.005	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.48	
Dibromofluoromethane (Surrogate Percent Recovery)			96.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT04
MH/nz/das/qcp
CJ4830-1

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ48131287V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: QP
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Toluene-d8 spike level		0.50	0.47	
Toluene-d8 (Surrogate Percent Recovery)			94.	
p-Bromofluorobenzene spike level		0.50	0.43	
p-Bromofluorobenzene (Surrogate Percent Recovery)			86.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

11/09/93
DV1/14OCT04
MH/nz/das/qcp
CJ4830-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

for

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		50.	790.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187; This report shall not be reproduced except in full without prior written approval from Coast-to-Coast Analytical Services, Inc.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/20/93
TPH1/13287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	20.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187; This report shall not be reproduced except in full without prior written approval from Coast-to-Coast Analytical Services, Inc.
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/20/93
TPH1/14287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479402870

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/4287
MH/gps/mem
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479402870

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL mg/Kg	SPIKE AMOUNT	RESULT mg/Kg	%REC	NOTE
Total Recoverable Petroleum Hydrocarbons by IR	5.	450.	430.	96.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/5287
MH/gps/mem
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479402870

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL mg/Kg	SPIKE AMOUNT	RESULT mg/Kg	%REC	%DIFF	NOTE
Total Recoverable Petroleum Hydrocarbons by IR	5.	450.	430.	96.	0.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/6287
MH/gps/mem
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ47946286V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS				1
Benzene	(71432)	0.005	ND	
Bromobenzene	(108861)	0.005	ND	
Bromochloromethane	(74975)	0.005	ND	
Bromodichloromethane	(75274)	0.005	ND	
Bromoform	(75252)	0.005	ND	
Bromomethane (Methyl bromide)	(74839)	0.01	ND	
n-Butylbenzene	(104518)	0.005	ND	
sec-Butylbenzene	(135988)	0.005	ND	
tert-Butylbenzene	(98066)	0.005	ND	
Carbon tetrachloride	(56235)	0.005	ND	
Chlorobenzene	(108907)	0.005	ND	
Chloroethane (Ethyl chloride)	(75003)	0.01	ND	
Chloroform	(67663)	0.005	ND	
Chloromethane (Methyl chloride)	(74873)	0.01	ND	
2-Chlorotoluene	(95498)	0.005	ND	
4-Chlorotoluene	(106434)	0.005	ND	
Dibromochloromethane	(124481)	0.005	ND	
1,2-Dibromo-3-chloropropane	(96128)	0.005	ND	
1,2-Dibromoethane (EDB)	(106934)	0.005	ND	
Dibromomethane	(74953)	0.005	ND	
1,2-Dichlorobenzene	(95501)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) EXTRACTED by EPA 5030 (purge-and-trap)

10/25/93
MSD7/BG761
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CJ4794-6

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ47946286V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
1,3-Dichlorobenzene	(541731)	0.005	ND	
1,4-Dichlorobenzene	(106467)	0.005	ND	
Dichlorodifluoromethane (Freon 12)	(75718)	0.01	ND	
1,1-Dichloroethane	(75343)	0.005	ND	
1,2-Dichloroethane (EDC)	(107062)	0.005	ND	
1,1-Dichloroethene	(75354)	0.005	ND	
cis-1,2-Dichloroethene	(156592)	0.005	ND	
trans-1,2-Dichloroethene	(156605)	0.005	ND	
1,2-Dichloropropane	(78875)	0.005	ND	
1,3-Dichloropropane	(142289)	0.005	ND	
2,2-Dichloropropane	(594207)	0.005	ND	
1,1-Dichloropropene	(563586)	0.005	ND	
Ethylbenzene	(100414)	0.005	ND	
Hexachlorobutadiene	(87683)	0.01	ND	
Isopropylbenzene	(98828)	0.005	ND	
4-Isopropyltoluene	(99876)	0.005	ND	
Methylene chloride	(75092)	0.01	ND	
Naphthalene	(91203)	0.05	ND	
n-Propylbenzene	(103651)	0.005	ND	
Styrene	(100425)	0.005	ND	
1,1,1,2-Tetrachloroethane	(630206)	0.005	ND	
1,1,2,2-Tetrachloroethane	(79345)	0.005	ND	
Tetrachloroethene (PCE)	(127184)	0.005	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/25/93
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QC Batch ID: CJ47946286V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/kg	RESULT mg/kg	NOTE
Toluene	(108883)	0.005	ND	
1,2,3-Trichlorobenzene	(87616)	0.02	ND	
1,2,4-Trichlorobenzene	(120821)	0.02	ND	
1,1,1-Trichloroethane (TCA)	(71556)	0.005	ND	
1,1,2-Trichloroethane	(79005)	0.005	ND	
Trichloroethene (TCE)	(79016)	0.005	ND	
Trichlorofluoromethane (Freon 11)	(75694)	0.01	ND	
1,2,3-Trichloropropane	(96184)	0.005	ND	
1,2,4-Trimethylbenzene	(95636)	0.005	ND	
1,3,5-Trimethylbenzene	(108678)	0.005	ND	
Vinyl chloride	(75014)	0.01	ND	
Xylenes	(1330207)	0.005	ND	
Acetone	(67641)	0.05	ND	
2-Butanone (MEK)	(78933)	0.05	ND	
Carbon disulfide	(75150)	0.005	ND	
cis-1,3-Dichloropropene		0.005	ND	
trans-1,3-Dichlropropene		0.005	ND	
Trichlorotrifluoroethane		0.005	ND	
Dibromofluoromethane (Surrogate Spike Amount)		0.50	0.63	
Dibromofluoromethane (Surrogate Percent Recovery)			126.	
Toluene-d8 spike level		0.50	0.50	
Toluene-d8 (Surrogate Percent Recovery)			100.	
p-Bromofluorobenzene spike level		0.50	0.43	
p-Bromofluorobenzene (Surrogate Percent Recovery)			86.	
TOTAL PETROLEUM HYDROCARBONS		0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/25/93
MSD7/BG761
MH/nz/clr
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ47946286V

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/13/93
Analyzed by: NZ
Method : EPA 8260

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE	Solid			

CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT mg/kg	%REC	NOTE
VOLATILE ORGANIC COMPOUNDS BY GC/MS					1
Benzene	ND	0.50	0.52	104.	
Chlorobenzene	ND	0.50	0.54	108.	
1,1-Dichloroethene	ND	0.50	0.68	136.	
Toluene	ND	0.50	0.53	106.	
Trichloroethene (TCE)	ND	0.50	0.56	112.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) EXTRACTED by EPA 5030 (purge-and-trap)

10/25/93
MSD7/BG765
MH/nz/clr
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

SOIL ANALYTICAL RESULTS
SVOA PRIORITY POLLUTANTS

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

10/22/93
MSD8/101911A
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CJ479406288B

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101911A
MH/edt/dsp
CJ4794062888

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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MH/edt/dsp
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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			60.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			67.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			62.	
Phenol-d5 (Surrogate Standard % Recovery)			65.	
2-Fluorophenol (Surrogate Standard % Recovery)			64.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			75.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101911A
MH/edt/dsp
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2,3
Acenaphthylene	(208968)	1.	ND	
Acenaphthene	(83329)	1.	ND	
Anthracene	(120127)	1.	ND	
Benzidine	(92875)	3.	ND	
Benzo(a)anthracene	(56553)	1.	ND	
Benzo(b)fluoranthene	(205992)	1.	ND	
Benzo(k)fluoranthene	(207089)	1.	ND	
Benzo(a)pyrene	(50328)	1.	ND	
Benzo(ghi)perylene	(191242)	3.	ND	
Bis(2-chloroethoxy)methane	(111911)	1.	ND	
Bis(2-chloroethyl)ether	(111444)	1.	ND	
Bis(2-chloroisopropyl)ether	(39638329)	1.	ND	
Bis(2-ethylhexyl)phthalate	(117817)	20.	ND	
4-Bromophenylphenylether	(101553)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

(3) The nature of the sample matrix necessitated dilution prior to analysis, resulting in raised Practical Quantitation Limits (PQLs).

10/22/93
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COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Butylbenzylphthalate	(85687)	1.	ND	
2-Chloronaphthalene	(91587)	1.	ND	
4-Chlorophenylphenylether	(7005723)	1.	ND	
Chrysene	(218019)	1.	ND	
Dibenzo(a,h)anthracene	(53703)	3.	ND	
Di-n-butylphthalate	(84742)	1.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
3,3-Dichlorobenzidine	(91941)	3.	ND	
Diethylphthalate	(84662)	3.	ND	
Dimethylphthalate	(131113)	1.	ND	
2,4-Dinitrotoluene	(121142)	3.	ND	
2,6-Dinitrotoluene	(606202)	3.	ND	
Di-n-octylphthalate	(117840)	1.	ND	
Fluoranthene	(206440)	1.	ND	
Fluorene	(86737)	3.	ND	
Hexachlorobenzene	(118741)	1.	ND	
Hexachlorobutadiene	(87683)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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MH/edt/dsp
CJ479406288B

COAST-TO-COAST ANALYTICAL SERVICES

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorocyclopentadiene	(77474)	3.	ND	
Hexachloroethane	(67721)	1.	ND	
Indeno(1,2,3-cd)pyrene	(193395)	1.	ND	
Isophorone	(78591)	1.	ND	
Naphthalene	(91203)	1.	ND	
Nitrobenzene	(98953)	1.	ND	
N-Nitrosodimethylamine	(62759)	1.	ND	
N-Nitrosodiphenylamine	(86306)	1.	ND	
N-Nitroso di-n-propylamine	(621647)	1.	ND	
Phenanthrene	(85018)	1.	ND	
Pyrene	(129000)	1.	ND	
Trichlorobenzene	(108703)	1.	ND	
Aldrin	(309002)	1.	ND	
alpha BHC	(319846)	1.	ND	
beta BHC	(319857)	1.	ND	
delta-BHC	(319868)	1.	ND	
gamma BHC (Lindane)	(58899)	1.	ND	
p,p'-DDD	(72548)	1.	ND	
p,p'-DDE	(72559)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
p,p'-DDT	(50293)	1.	ND	
Dieldrin	(60571)	1.	ND	
Endosulfan I	(959988)	3.	ND	
Endosulfan II	(33213659)	3.	ND	
Endosulfan Sulfate	(1031078)	1.	ND	
Endrin	(72208)	1.	ND	
Endrin Aldehyde	(7421934)	1.	ND	
Heptachlor	(76448)	1.	ND	
Heptachlor Epoxide	(1024573)	3.	ND	
Chlordane	(57749)	30.	ND	
Methoxychlor	(72435)	1.	ND	
Toxaphene	(8001352)	30.	ND	
PCB 1016	(12674112)	30.	ND	
PCB 1221	(11104282)	30.	ND	
PCB 1232	(11141165)	30.	ND	
PCB 1242	(53469219)	30.	ND	
PCB 1248	(12672825)	30.	ND	
PCB 1254	(11097691)	30.	ND	
PCB 1260	(11096825)	30.	ND	

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chloro-3-methylphenol	(59507)	1.	ND	
2-Chlorophenol	(95578)	1.	ND	
2,4-Dichlorophenol	(120832)	3.	ND	
2,4-Dimethylphenol	(105679)	3.	ND	
2,4-Dinitrophenol	(51285)	3.	ND	
2-Methyl-4,6-dinitrophenol	(534521)	3.	ND	
2-Nitrophenol	(88755)	1.	ND	
4-Nitrophenol	(100027)	3.	ND	
Pentachlorophenol	(87865)	3.	ND	
Phenol	(108952)	1.	ND	
2,4,6-Trichlorophenol	(88062)	3.	ND	
Cresols		3.	ND	
Methylnaphthalenes		1.	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			50.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			67.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			67.	
Phenol-d5 (Surrogate Standard % Recovery)			54.	
2-Fluorophenol (Surrogate Standard % Recovery)			55.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			77.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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10/22/93
MSD8/101912A
MH/edt/dsp
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 3550

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2,3
Acenaphthylene	(208968)	1.	ND	
Acenaphthene	(83329)	1.	ND	
Anthracene	(120127)	1.	ND	
Benzidine	(92875)	3.	ND	
Benzo(a)anthracene	(56553)	1.	ND	
Benzo(b)fluoranthene	(205992)	1.	ND	
Benzo(k)fluoranthene	(207089)	1.	ND	
Benzo(a)pyrene	(50328)	1.	ND	
Benzo(ghi)perylene	(191242)	3.	ND	
Bis(2-chloroethoxy)methane	(111911)	1.	ND	
Bis(2-chloroethyl)ether	(111444)	1.	ND	
Bis(2-chloroisopropyl)ether	(39638329)	1.	ND	
Bis(2-ethylhexyl)phthalate	(117817)	20.	ND	
4-Bromophenylphenylether	(101553)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

(3) The nature of the sample matrix necessitated dilution prior to analysis, resulting in raised Practical Quantitation Limits (PQLs).

10/22/93
MSD5/101913A
MH/edt/dsp
CJ479406288B

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Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 3550

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Butylbenzylphthalate	(85687)	1.	ND	
2-Chloronaphthalene	(91587)	1.	ND	
4-Chlorophenylphenylether	(7005723)	1.	ND	
Chrysene	(218019)	1.	ND	
Dibenzo(a,h)anthracene	(53703)	3.	ND	
Di-n-butylphthalate	(84742)	1.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
3,3-Dichlorobenzidine	(91941)	3.	ND	
Diethylphthalate	(84662)	3.	ND	
Dimethylphthalate	(131113)	1.	ND	
2,4-Dinitrotoluene	(121142)	3.	ND	
2,6-Dinitrotoluene	(606202)	3.	ND	
Di-n-octylphthalate	(117840)	1.	ND	
Fluoranthene	(206440)	1.	ND	
Fluorene	(86737)	3.	ND	
Hexachlorobenzene	(118741)	1.	ND	
Hexachlorobutadiene	(87683)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 3550

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorocyclopentadiene	(77474)	3.	ND	
Hexachloroethane	(67721)	1.	ND	
Indeno(1,2,3-cd)pyrene	(193395)	1.	ND	
Isophorone	(78591)	1.	ND	
Naphthalene	(91203)	1.	ND	
Nitrobenzene	(98953)	1.	ND	
N-Nitrosodimethylamine	(62759)	1.	ND	
N-Nitrosodiphenylamine	(86306)	1.	ND	
N-Nitroso di-n-propylamine	(621647)	1.	ND	
Phenanthrene	(85018)	1.	ND	
Pyrene	(129000)	1.	ND	
Trichlorobenzene	(108703)	1.	ND	
Aldrin	(309002)	1.	ND	
alpha BHC	(319846)	1.	ND	
beta BHC	(319857)	1.	ND	
delta-BHC	(319868)	1.	ND	
gamma BHC (Lindane)	(58899)	1.	ND	
p,p'-DDD	(72548)	1.	ND	
p,p'-DDE	(72559)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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Project : 93C0564 A

Analyzed : 10/19/93
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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
p,p'-DDT	(50293)	1.	ND	
Dieldrin	(60571)	1.	ND	
Endosulfan I	(959988)	3.	ND	
Endosulfan II	(33213659)	3.	ND	
Endosulfan Sulfate	(1031078)	1.	ND	
Endrin	(72208)	1.	ND	
Endrin Aldehyde	(7421934)	1.	ND	
Heptachlor	(76448)	1.	ND	
Heptachlor Epoxide	(1024573)	3.	ND	
Chlordane	(57749)	30.	ND	
Methoxychlor	(72435)	1.	ND	
Toxaphene	(8001352)	30.	ND	
PCB 1016	(12674112)	30.	ND	
PCB 1221	(11104282)	30.	ND	
PCB 1232	(11141165)	30.	ND	
PCB 1242	(53469219)	30.	ND	
PCB 1248	(12672825)	30.	ND	
PCB 1254	(11097691)	30.	ND	
PCB 1260	(11096825)	30.	ND	

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SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chloro-3-methylphenol	(59507)	1.	ND	
2-Chlorophenol	(95578)	1.	ND	
2,4-Dichlorophenol	(120832)	3.	ND	
2,4-Dimethylphenol	(105679)	3.	ND	
2,4-Dinitrophenol	(51285)	3.	ND	
2-Methyl-4,6-dinitrophenol	(534521)	3.	ND	
2-Nitrophenol	(88755)	1.	ND	
4-Nitrophenol	(100027)	3.	ND	
Pentachlorophenol	(87865)	3.	ND	
Phenol	(108952)	1.	ND	
2,4,6-Trichlorophenol	(88062)	3.	ND	
Cresols		3.	ND	
Methylnaphthalenes		1.	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			45.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			65.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			65.	
Phenol-d5 (Surrogate Standard % Recovery)			51.	
2-Fluorophenol (Surrogate Standard % Recovery)			50.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			67.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

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10/22/93
MSD5/101913A
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CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

10/22/93
MSD8/101921A
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			46.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			56.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			56.	
Phenol-d5 (Surrogate Standard % Recovery)			47.	
2-Fluorophenol (Surrogate Standard % Recovery)			49.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			68.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101921A
MH/edt
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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CLIENT: Joe Morgan
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Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2,3
Acenaphthylene	(208968)	1.	ND	
Acenaphthene	(83329)	1.	ND	
Anthracene	(120127)	1.	ND	
Benzidine	(92875)	3.	ND	
Benzo(a)anthracene	(56553)	1.	ND	
Benzo(b)fluoranthene	(205992)	1.	ND	
Benzo(k)fluoranthene	(207089)	1.	ND	
Benzo(a)pyrene	(50328)	1.	ND	
Benzo(ghi)perylene	(191242)	3.	ND	
Bis(2-chloroethoxy)methane	(111911)	1.	ND	
Bis(2-chloroethyl)ether	(111444)	1.	ND	
Bis(2-chloroisopropyl)ether	(39638329)	1.	ND	
Bis(2-ethylhexyl)phthalate	(117817)	20.	ND	
4-Bromophenylphenylether	(101553)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

(3) The nature of the sample matrix necessitated dilution prior to analysis, resulting in raised Practical Quantitation Limits (PQLs).

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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Butylbenzylphthalate	(85687)	1.	ND	
2-Chloronaphthalene	(91587)	1.	ND	
4-Chlorophenylphenylether	(7005723)	1.	ND	
Chrysene	(218019)	1.	ND	
Dibenzo(a,h)anthracene	(53703)	3.	ND	
Di-n-butylphthalate	(84742)	1.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
3,3-Dichlorobenzidine	(91941)	3.	ND	
Diethylphthalate	(84662)	3.	ND	
Dimethylphthalate	(131113)	1.	ND	
2,4-Dinitrotoluene	(121142)	3.	ND	
2,6-Dinitrotoluene	(606202)	3.	ND	
Di-n-octylphthalate	(117840)	1.	ND	
Fluoranthene	(206440)	1.	ND	
Fluorene	(86737)	3.	ND	
Hexachlorobenzene	(118741)	1.	ND	
Hexachlorobutadiene	(87683)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorocyclopentadiene	(77474)	3.	ND	
Hexachloroethane	(67721)	1.	ND	
Indeno(1,2,3-cd)pyrene	(193395)	1.	ND	
Isophorone	(78591)	1.	ND	
Naphthalene	(91203)	1.	ND	
Nitrobenzene	(98953)	1.	ND	
N-Nitrosodimethylamine	(62759)	1.	ND	
N-Nitrosodiphenylamine	(86306)	1.	ND	
N-Nitroso di-n-propylamine	(621647)	1.	ND	
Phenanthrene	(85018)	1.	ND	
Pyrene	(129000)	1.	ND	
Trichlorobenzene	(108703)	1.	ND	
Aldrin	(309002)	1.	ND	
alpha BHC	(319846)	1.	ND	
beta BHC	(319857)	1.	ND	
delta-BHC	(319868)	1.	ND	
gamma BHC (Lindane)	(58899)	1.	ND	
p,p'-DDD	(72548)	1.	ND	
p,p'-DDE	(72559)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
p,p'-DDT	(50293)	1.	ND	
Dieldrin	(60571)	1.	ND	
Endosulfan I	(959988)	3.	ND	
Endosulfan II	(33213659)	3.	ND	
Endosulfan Sulfate	(1031078)	1.	ND	
Endrin	(72208)	1.	ND	
Endrin Aldehyde	(7421934)	1.	ND	
Heptachlor	(76448)	1.	ND	
Heptachlor Epoxide	(1024573)	3.	ND	
Chlordane	(57749)	30.	ND	
Methoxychlor	(72435)	1.	ND	
Toxaphene	(8001352)	30.	ND	
PCB 1016	(12674112)	30.	ND	
PCB 1221	(11104282)	30.	ND	
PCB 1232	(11141165)	30.	ND	
PCB 1242	(53469219)	30.	ND	
PCB 1248	(12672825)	30.	ND	
PCB 1254	(11097691)	30.	ND	
PCB 1260	(11096825)	30.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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CLIENT: Joe Morgan
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Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chloro-3-methylphenol	(59507)	1.	ND	
2-Chlorophenol	(95578)	1.	ND	
2,4-Dichlorophenol	(120832)	3.	ND	
2,4-Dimethylphenol	(105679)	3.	ND	
2,4-Dinitrophenol	(51285)	3.	ND	
2-Methyl-4,6-dinitrophenol	(534521)	3.	ND	
2-Nitrophenol	(88755)	1.	ND	
4-Nitrophenol	(100027)	3.	ND	
Pentachlorophenol	(87865)	3.	ND	
Phenol	(108952)	1.	ND	
2,4,6-Trichlorophenol	(88062)	3.	ND	
Cresols		3.	ND	
Methylnaphthalenes		1.	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			52.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			73.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			65.	
Phenol-d5 (Surrogate Standard % Recovery)			47.	
2-Fluorophenol (Surrogate Standard % Recovery)			61.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			73.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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MH/edt
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2,3
Acenaphthylene	(208968)	1.	ND	
Acenaphthene	(83329)	1.	ND	
Anthracene	(120127)	1.	ND	
Benzidine	(92875)	3.	ND	
Benzo(a)anthracene	(56553)	1.	ND	
Benzo(b)fluoranthene	(205992)	1.	ND	
Benzo(k)fluoranthene	(207089)	1.	ND	
Benzo(a)pyrene	(50328)	1.	ND	
Benzo(ghi)perylene	(191242)	3.	ND	
Bis(2-chloroethoxy)methane	(111911)	1.	ND	
Bis(2-chloroethyl)ether	(111444)	1.	ND	
Bis(2-chloroisopropyl)ether	(39638329)	1.	ND	
Bis(2-ethylhexyl)phthalate	(117817)	20.	ND	
4-Bromophenylphenylether	(101553)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

(3) The nature of the sample matrix necessitated dilution prior to analysis, resulting in raised Practical Quantitation Limits (PQLs).

10/22/93
MSD8/101923A
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Butylbenzylphthalate	(85687)	1.	ND	
2-Chloronaphthalene	(91587)	1.	ND	
4-Chlorophenylphenylether	(7005723)	1.	ND	
Chrysene	(218019)	1.	ND	
Dibenzo(a,h)anthracene	(53703)	3.	ND	
Di-n-butylphthalate	(84742)	1.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
3,3-Dichlorobenzidine	(91941)	3.	ND	
Diethylphthalate	(84662)	3.	ND	
Dimethylphthalate	(131113)	1.	ND	
2,4-Dinitrotoluene	(121142)	3.	ND	
2,6-Dinitrotoluene	(606202)	3.	ND	
Di-n-octylphthalate	(117840)	1.	ND	
Fluoranthene	(206440)	1.	ND	
Fluorene	(86737)	3.	ND	
Hexachlorobenzene	(118741)	1.	ND	
Hexachlorobutadiene	(87683)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Hexachlorocyclopentadiene	(77474)	3.	ND	
Hexachloroethane	(67721)	1.	ND	
Indeno(1,2,3-cd)pyrene	(193395)	1.	ND	
Isophorone	(78591)	1.	ND	
Naphthalene	(91203)	1.	ND	
Nitrobenzene	(98953)	1.	ND	
N-Nitrosodimethylamine	(62759)	1.	ND	
N-Nitrosodiphenylamine	(86306)	1.	ND	
N-Nitroso di-n-propylamine	(621647)	1.	ND	
Phenanthrene	(85018)	1.	ND	
Pyrene	(129000)	1.	ND	
Trichlorobenzene	(108703)	1.	ND	
Aldrin	(309002)	1.	ND	
alpha BHC	(319846)	1.	ND	
beta BHC	(319857)	1.	ND	
delta-BHC	(319868)	1.	ND	
gamma BHC (Lindane)	(58899)	1.	ND	
p,p'-DDD	(72548)	1.	ND	
p,p'-DDE	(72559)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
p,p'-DDT	(50293)	1.	ND	
Dieldrin	(60571)	1.	ND	
Endosulfan I	(959988)	3.	ND	
Endosulfan II	(33213659)	3.	ND	
Endosulfan Sulfate	(1031078)	1.	ND	
Endrin	(72208)	1.	ND	
Endrin Aldehyde	(7421934)	1.	ND	
Heptachlor	(76448)	1.	ND	
Heptachlor Epoxide	(1024573)	3.	ND	
Chlordane	(57749)	30.	ND	
Methoxychlor	(72435)	1.	ND	
Toxaphene	(8001352)	30.	ND	
PCB 1016	(12674112)	30.	ND	
PCB 1221	(11104282)	30.	ND	
PCB 1232	(11141165)	30.	ND	
PCB 1242	(53469219)	30.	ND	
PCB 1248	(12672825)	30.	ND	
PCB 1254	(11097691)	30.	ND	
PCB 1260	(11096825)	30.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
4-Chloro-3-methylphenol	(59507)	1.	ND	
2-Chlorophenol	(95578)	1.	ND	
2,4-Dichlorophenol	(120832)	3.	ND	
2,4-Dimethylphenol	(105679)	3.	ND	
2,4-Dinitrophenol	(51285)	3.	ND	
2-Methyl-4,6-dinitrophenol	(534521)	3.	ND	
2-Nitrophenol	(88755)	1.	ND	
4-Nitrophenol	(100027)	3.	ND	
Pentachlorophenol	(87865)	3.	ND	
Phenol	(108952)	1.	ND	
2,4,6-Trichlorophenol	(88062)	3.	ND	
Cresols		3.	ND	
Methylnaphthalenes		1.	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			50.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			67.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			65.	
Phenol-d5 (Surrogate Standard % Recovery)			45.	
2-Fluorophenol (Surrogate Standard % Recovery)			58.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			75.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101923A
MH/edt
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
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500 12th St. Ste. 100
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Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	
4-Chlorophenylphenylether	(7005723)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

10/22/93
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CLIENT: Joe Morgan
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Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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MSD8/101910A
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CJ479406288B

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Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
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Oakland, CA 94607

Lab Number : CJ-4830-1
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			54.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			66.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			63.	
Phenol-d5 (Surrogate Standard % Recovery)			60.	
2-Fluorophenol (Surrogate Standard % Recovery)			61.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			74.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101910A
MH/edt/dsp
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2,3
Acenaphthylene	(208968)	1.	ND	
Acenaphthene	(83329)	1.	ND	
Anthracene	(120127)	1.	ND	
Benzidine	(92875)	3.	ND	
Benzo(a)anthracene	(56553)	1.	ND	
Benzo(b)fluoranthene	(205992)	1.	ND	
Benzo(k)fluoranthene	(207089)	1.	ND	
Benzo(a)pyrene	(50328)	1.	ND	
Benzo(ghi)perylene	(191242)	3.	ND	
Bis(2-chloroethoxy)methane	(111911)	1.	ND	
Bis(2-chloroethyl)ether	(111444)	1.	ND	
Bis(2-chloroisopropyl)ether	(39638329)	1.	ND	
Bis(2-ethylhexyl)phthalate	(117817)	20.	ND	
4-Bromophenylphenylether	(101553)	1.	ND	
Butylbenzylphthalate	(85687)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by LP using EPA 3550

(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

(3) The nature of the sample matrix necessitated dilution prior to analysis, resulting in raised Practical Quantitation Limits (PQLs).

10/22/93
MSD5/101909A
MH/edt/dsp
CJ479406288B

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
2-Chloronaphthalene	(91587)	1.	ND	
4-Chlorophenylphenylether	(7005723)	1.	ND	
Chrysene	(218019)	1.	ND	
Dibenzo(a,h)anthracene	(53703)	3.	ND	
Di-n-butylphthalate	(84742)	1.	ND	
1,2-Dichlorobenzene	(95501)	1.	ND	
1,3-Dichlorobenzene	(541731)	1.	ND	
1,4-Dichlorobenzene	(106467)	1.	ND	
3,3-Dichlorobenzidine	(91941)	3.	ND	
Diethylphthalate	(84662)	3.	ND	
Dimethylphthalate	(131113)	1.	ND	
2,4-Dinitrotoluene	(121142)	3.	ND	
2,6-Dinitrotoluene	(606202)	3.	ND	
Di-n-octylphthalate	(117840)	1.	ND	
Fluoranthene	(206440)	1.	ND	
Fluorene	(86737)	3.	ND	
Hexachlorobenzene	(118741)	1.	ND	
Hexachlorobutadiene	(87683)	1.	ND	
Hexachlorocyclopentadiene	(77474)	3.	ND	
Hexachloroethane	(67721)	1.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD5/101909A
MH/edt/dsp
CJ479406288B

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Indeno(1,2,3-cd)pyrene	(193395)	1.	ND	
Isophorone	(78591)	1.	ND	
Naphthalene	(91203)	1.	ND	
Nitrobenzene	(98953)	1.	ND	
N-Nitrosodimethylamine	(62759)	1.	ND	
N-Nitrosodiphenylamine	(86306)	1.	ND	
N-Nitroso di-n-propylamine	(621647)	1.	ND	
Phenanthrene	(85018)	1.	ND	
Pyrene	(129000)	1.	ND	
Trichlorobenzene	(108703)	1.	ND	
Aldrin	(309002)	1.	ND	
alpha BHC	(319846)	1.	ND	
beta BHC	(319857)	1.	ND	
delta-BHC	(319868)	1.	ND	
gamma BHC (Lindane)	(58899)	1.	ND	
p,p'-DDD	(72548)	1.	ND	
p,p'-DDE	(72559)	1.	ND	
p,p'-DDT	(50293)	1.	ND	
Dieldrin	(60571)	1.	ND	
Endosulfan I	(959988)	3.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD5/101909A
MH/edt/dsp
CJ479406288B

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Endosulfan II	(33213659)	3.	ND	
Endosulfan Sulfate	(1031078)	1.	ND	
Endrin	(72208)	1.	ND	
Endrin Aldehyde	(7421934)	1.	ND	
Heptachlor	(76448)	1.	ND	
Heptachlor Epoxide	(1024573)	3.	ND	
Chlordane	(57749)	30.	ND	
Methoxychlor	(72435)	1.	ND	
Toxaphene	(8001352)	30.	ND	
PCB 1016	(12674112)	30.	ND	
PCB 1221	(11104282)	30.	ND	
PCB 1232	(11141165)	30.	ND	
PCB 1242	(53469219)	30.	ND	
PCB 1248	(12672825)	30.	ND	
PCB 1254	(11097691)	30.	ND	
PCB 1260	(11096825)	30.	ND	
4-Chloro-3-methylphenol	(59507)	1.	ND	
2-Chlorophenol	(95578)	1.	ND	
2,4-Dichlorophenol	(120832)	3.	ND	
2,4-Dimethylphenol	(105679)	3.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD5/101909A
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COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4830-2
Project : #93C0564A

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
2,4-Dinitrophenol	(51285)	3.	ND	
2-Methyl-4,6-dinitrophenol	(534521)	3.	ND	
2-Nitrophenol	(88755)	1.	ND	
4-Nitrophenol	(100027)	3.	ND	
Pentachlorophenol	(87865)	3.	ND	
Phenol	(108952)	1.	ND	
2,4,6-Trichlorophenol	(88062)	3.	ND	
Cresols		3.	ND	
Methylnaphthalenes		1.	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			49.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			67.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			66.	
Phenol-d5 (Surrogate Standard % Recovery)			54.	
2-Fluorophenol (Surrogate Standard % Recovery)			59.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			72.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD5/101909A
MH/edt/dsp
CJ479406288B

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550
(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			63.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			71.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			66.	
Phenol-d5 (Surrogate Standard % Recovery)			62.	
2-Fluorophenol (Surrogate Standard % Recovery)			63.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			66.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS #)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				1,2
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550
(2) Acid surrogates are spiked at 6.7 mg/Kg; base/neutral surrogates are spiked at 3.3 mg/Kg.

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	
Nitrobenzene-d5 (Surrogate Percent Recovery)			63.	
2-Fluorobiphenyl (Surrogate Standard % Recovery)			71.	
4-Terphenyl-d14 (Surrogate Standard % Recovery)			66.	
Phenol-d5 (Surrogate Standard % Recovery)			62.	
2-Fluorophenol (Surrogate Standard % Recovery)			63.	
2,4,6,-Tribromophenol (Surrogate Standard % Recovery)			66.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101920A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101919A
MH/edt/dsp/wh
CJ4794-6

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101919A
MH/edt/dsp/wh
CJ4794-6

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/22/93
MSD8/101919A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
MATRIX SPIKE	Solid		

CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT mg/Kg	%REC	NOTE
SVOA PRIORITY POLLUTANTS					1
Acenaphthene	ND	3.33	2.35	71.	
1,4-Dichlorobenzene	ND	3.33	3.01	90.	
2,4-Dinitrotoluene	ND	3.33	2.73	82.	
N-Nitroso di-n-propylamine	ND	3.33	3.02	91.	
Pyrene	ND	3.33	2.26	68.	
Trichlorobenzene	ND	3.33	2.41	72.	
4-Chloro-3-methylphenol	ND	6.67	5.66	85.	
2-Chlorophenol	ND	6.67	4.26	64.	
4-Nitrophenol	ND	6.67	5.82	87.	
Pentachlorophenol	ND	6.67	3.55	53.	
Phenol	ND	6.67	4.94	74.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550

10/22/93
MSD8/101917A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT mg/Kg	%REC	%DIFF	NOTE
SVOA PRIORITY POLLUTANTS						1
Acenaphthene	ND	3.33	2.78	83.	17.	
1,4-Dichlorobenzene	ND	3.33	2.90	87.	3.7	
2,4-Dinitrotoluene	ND	3.33	2.74	82.	0.37	
N-Nitroso di-n-propylamine	ND	3.33	2.78	83.	8.3	
Pyrene	ND	3.33	2.11	63.	6.9	
Trichlorobenzene	ND	3.33	2.28	68.	5.5	
4-Chloro-3-methylphenol	ND	6.67	5.45	82.	3.8	
2-Chlorophenol	ND	6.67	4.05	61.	5.1	
4-Nitrophenol	ND	6.67	6.65	100.	13.	
Pentachlorophenol	ND	6.67	3.33	50.	6.4	
Phenol	ND	6.67	4.62	69.	6.7	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550

10/22/93
MSD8/101918A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
MATRIX SPIKE	Solid		

CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT mg/Kg	%REC	NOTE
SVOA PRIORITY POLLUTANTS					1
Acenaphthene	ND	3.33	2.35	71.	
1,4-Dichlorobenzene	ND	3.33	3.01	90.	
2,4-Dinitrotoluene	ND	3.33	2.73	82.	
N-Nitroso di-n-propylamine	ND	3.33	3.02	91.	
Pyrene	ND	3.33	2.26	68.	
Trichlorobenzene	ND	3.33	2.41	72.	
4-Chloro-3-methylphenol	ND	6.67	5.66	85.	
2-Chlorophenol	ND	6.67	4.26	64.	
4-Nitrophenol	ND	6.67	5.82	87.	
Pentachlorophenol	ND	6.67	3.55	53.	
Phenol	ND	6.67	4.94	74.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550

10/25/93
MSD8/101917A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/19/93
Analyzed by: DP
Method : EPA 8270

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT mg/Kg	%REC	%DIFF	NOTE
SVOA PRIORITY POLLUTANTS						1
Acenaphthene	ND	3.33	2.78	83.	17.	
1,4-Dichlorobenzene	ND	3.33	2.90	87.	3.7	
2,4-Dinitrotoluene	ND	3.33	2.74	82.	0.37	
N-Nitroso di-n-propylamine	ND	3.33	2.78	83.	8.3	
Pyrene	ND	3.33	2.11	63.	6.9	
Trichlorobenzene	ND	3.33	2.28	68.	5.5	
4-Chloro-3-methylphenol	ND	6.67	5.45	82.	3.8	
2-Chlorophenol	ND	6.67	4.05	61.	5.1	
4-Nitrophenol	ND	6.67	6.65	100.	13.	
Pentachlorophenol	ND	6.67	3.33	50.	6.4	
Phenol	ND	6.67	4.62	69.	6.7	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by LP using EPA 3550

10/25/93
MSD8/101918A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
SVOA PRIORITY POLLUTANTS				
Acenaphthylene	(208968)	0.2	ND	
Acenaphthene	(83329)	0.2	ND	
Anthracene	(120127)	0.2	ND	
Benzidine	(92875)	0.5	ND	
Benzo(a)anthracene	(56553)	0.2	ND	
Benzo(b)fluoranthene	(205992)	0.2	ND	
Benzo(k)fluoranthene	(207089)	0.2	ND	
Benzo(a)pyrene	(50328)	0.2	ND	
Benzo(ghi)perylene	(191242)	0.5	ND	
Bis(2-chloroethoxy)methane	(111911)	0.2	ND	
Bis(2-chloroethyl)ether	(111444)	0.2	ND	
Bis(2-chloroisopropyl)ether	(39638329)	0.2	ND	
Bis(2-ethylhexyl)phthalate	(117817)	3.0	ND	
4-Bromophenylphenylether	(101553)	0.2	ND	
Butylbenzylphthalate	(85687)	0.2	ND	
2-Chloronaphthalene	(91587)	0.2	ND	
4-Chlorophenylphenylether	(7005723)	0.2	ND	
Chrysene	(218019)	0.2	ND	
Dibenzo(a,h)anthracene	(53703)	0.5	ND	
Di-n-butylphthalate	(84742)	0.2	ND	
1,2-Dichlorobenzene	(95501)	0.2	ND	
1,3-Dichlorobenzene	(541731)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/25/93
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MH/edt/dsp/wh
CJ4794-6

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So[illegible] Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
1,4-Dichlorobenzene	(106467)	0.2	ND	
3,3-Dichlorobenzidine	(91941)	0.5	ND	
Diethylphthalate	(84662)	0.5	ND	
Dimethylphthalate	(131113)	0.2	ND	
2,4-Dinitrotoluene	(121142)	0.5	ND	
2,6-Dinitrotoluene	(606202)	0.5	ND	
Di-n-octylphthalate	(117840)	0.2	ND	
Fluoranthene	(206440)	0.2	ND	
Fluorene	(86737)	0.5	ND	
Hexachlorobenzene	(118741)	0.2	ND	
Hexachlorobutadiene	(87683)	0.2	ND	
Hexachlorocyclopentadiene	(77474)	0.5	ND	
Hexachloroethane	(67721)	0.2	ND	
Indeno(1,2,3-cd)pyrene	(193395)	0.2	ND	
Isophorone	(78591)	0.2	ND	
Naphthalene	(91203)	0.2	ND	
Nitrobenzene	(98953)	0.2	ND	
N-Nitrosodimethylamine	(62759)	0.2	ND	
N-Nitrosodiphenylamine	(86306)	0.2	ND	
N-Nitroso di-n-propylamine	(621647)	0.2	ND	
Phenanthrene	(85018)	0.2	ND	
Pyrene	(129000)	0.2	ND	
Trichlorobenzene	(108703)	0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #101[illegible]
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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Aldrin	(309002)	0.2	ND	
alpha BHC	(319846)	0.2	ND	
beta BHC	(319857)	0.2	ND	
delta-BHC	(319868)	0.2	ND	
gamma BHC (Lindane)	(58899)	0.2	ND	
p,p'-DDD	(72548)	0.2	ND	
p,p'-DDE	(72559)	0.2	ND	
p,p'-DDT	(50293)	0.2	ND	
Dieldrin	(60571)	0.2	ND	
Endosulfan I	(959988)	0.5	ND	
Endosulfan II	(33213659)	0.5	ND	
Endosulfan Sulfate	(1031078)	0.2	ND	
Endrin	(72208)	0.2	ND	
Endrin Aldehyde	(7421934)	0.2	ND	
Heptachlor	(76448)	0.2	ND	
Heptachlor Epoxide	(1024573)	0.5	ND	
Chlordane	(57749)	5.	ND	
Methoxychlor	(72435)	0.2	ND	
Toxaphene	(8001352)	5.	ND	
PCB 1016	(12674112)	5.	ND	
PCB 1221	(11104282)	5.	ND	
PCB 1232	(11141165)	5.	ND	
PCB 1242	(53469219)	5.	ND	

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QC Batch ID: CJ479406288B

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 10/20/93
Analyzed by: DP
Method : EPA 8270

INSTRUMENT BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
INSTRUMENT BLANK	Solid			

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
PCB 1248	(12672825)	5.	ND	
PCB 1254	(11097691)	5.	ND	
PCB 1260	(11096825)	5.	ND	
4-Chloro-3-methylphenol	(59507)	0.2	ND	
2-Chlorophenol	(95578)	0.2	ND	
2,4-Dichlorophenol	(120832)	0.5	ND	
2,4-Dimethylphenol	(105679)	0.5	ND	
2,4-Dinitrophenol	(51285)	0.5	ND	
2-Methyl-4,6-dinitrophenol	(534521)	0.5	ND	
2-Nitrophenol	(88755)	0.2	ND	
4-Nitrophenol	(100027)	0.5	ND	
Pentachlorophenol	(87865)	0.5	ND	
Phenol	(108952)	0.2	ND	
2,4,6-Trichlorophenol	(88062)	0.5	ND	
Cresols		0.5	ND	
Methylnaphthalenes		0.2	ND	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
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10/25/93
MSD8/101919A
MH/edt/dsp/wh
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
Mercury, Total	0.01	ND	mg/Kg	EPA 7470	10/19/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
Thallium, Total	15.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
METALS SCAN BY ICP							1,3
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/18/93	EN	
Arsenic, Total	0.5	ND	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	0.3	ND	mg/Kg	EPA 6010	10/18/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A
(2) Sample Preparation on 10/18/93 by JF
(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/20/93

MH
CJ4830-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
METALS SCAN BY ICP							1
Barium, Total	0.3	ND	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	ND	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	1.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Calcium, Total	20.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	1.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	1.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Copper, Total	10.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Iron, Total	10.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Magnesium, Total	5.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Manganese, Total	0.5	ND	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Nickel, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Potassium, Total	50.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Sodium, Total	25.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	0.5	ND	mg/Kg	EPA 6010	10/19/93	EN	
Zinc, Total	10.	ND	mg/Kg	EPA 6010	10/19/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

10/20/93

MH
CJ4830-1

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QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MATRIX SPIKE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Total	0.42	0.50	0.69	54.	mg/Kg	EPA 7470	10/19/93	RB	1
Selenium, Total	ND	200.	180.	90.	mg/Kg	EPA 6010	10/19/93	EN	2
Thallium, Total	ND	200.	180.	90.	mg/Kg	EPA 6010	10/19/93	EN	2
METALS SCAN BY ICP									2,3
Arsenic, Total	1.5	200.	240.	119.	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	2.3	5.0	8.8	130.	mg/Kg	EPA 6010	10/18/93	EN	
METALS SCAN BY ICP									2
Barium, Total	63.	200.	290.	114.	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	5.0	4.1	80.	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	ND	5.0	5.	100.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	8.	20.	20.	60.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	4.	50.	43.	78.	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	ND	50.	43.	86.	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	7.2	50.	48.	82.	mg/Kg	EPA 6010	10/19/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/18/93 by JF
(2) Sample Preparation on 10/15/93 by CLH using EPA 3050A
(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/20/93

MH
CJ4830-1

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QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Total	0.42	0.50	0.60	40.	mg/Kg	EPA 7470	10/19/93	RB	1
Thallium, Total	ND	200.	210.	15.	mg/Kg	EPA 6010	10/19/93	EN	2
METALS SCAN BY ICP									2,3
Arsenic, Total	1.5	200.	220.	8.8	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	2.3	5.0	8.9	1.5	mg/Kg	EPA 6010	10/18/93	EN	
METALS SCAN BY ICP									2
Barium, Total	63.	200.	270.	9.2	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	5.0	4.0	2.5	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	ND	5.0	6.	18.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	8.	20.	23.	22.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	4.	50.	42.	2.6	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	ND	50.	39.	9.8	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	7.2	50.	47.	2.5	mg/Kg	EPA 6010	10/19/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/18/93 by JF
(2) Sample Preparation on 10/15/93 by CLH using EPA 3050A
(3) Ag analyzed bu EPA 7760, As by EPA 7060.

10/20/93

MH
CJ4830-1

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QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
QC SPIKE	Solid		

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	3.	50.	51.	102.	mg/Kg	EPA 6010	10/19/93	EN	1
Mercury, Total	0.01	0.50	0.51	102.	mg/Kg	EPA 7470	10/19/93	RB	2
Selenium, Total	3.	200.	200.	100.	mg/Kg	EPA 6010	10/19/93	EN	1
Thallium, Total	15.	200.	210.	105.	mg/Kg	EPA 6010	10/19/93	EN	1
METALS SCAN BY ICP									1,3
Antimony, Total	3.	50.	45.	90.	mg/Kg	EPA 6010	10/18/93	EN	
Arsenic, Total	0.5	200.	190.	95.	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	0.3	5.0	5.3	106.	mg/Kg	EPA 6010	10/18/93	EN	
METALS SCAN BY ICP									1
Barium, Total	0.3	200.	190.	95.	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	5.0	4.9	98.	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	1.	5.	5.	100.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	1.	40.	20.	50.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	1.	50.	52.	104.	mg/Kg	EPA 6010	10/19/93	EN	
Copper, Total	10.	25.	25.	100.	mg/Kg	EPA 6010	10/19/93	EN	
Iron, Total	10.	100.	100.	100.	mg/Kg	EPA 6010	10/19/93	EN	
Manganese, Total	0.5	50.	50.	100.	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	3.	50.	49.	98.	mg/Kg	EPA 6010	10/19/93	EN	
Nickel, Total	3.	50.	52.	104.	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	0.5	50.	49.	98.	mg/Kg	EPA 6010	10/19/93	EN	
Zinc, Total	10.	50.	54.	108.	mg/Kg	EPA 6010	10/19/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A
(2) Sample Preparation on 10/18/93 by JF
(3) Ag analyzed bu EPA 7760, As by EPA 7060.

10/20/93

MH
CJ4830-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JJ155NHA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	3.	50.	50.	2.	mg/Kg	EPA 6010	10/19/93	EN	1
Mercury, Total	0.01	0.50	0.55	7.5	mg/Kg	EPA 7470	10/19/93	RB	2
Selenium, Total	3.	200.	200.	0.	mg/Kg	EPA 6010	10/19/93	EN	1
Thallium, Total	15.	200.	200.	4.9	mg/Kg	EPA 6010	10/19/93	EN	1
METALS SCAN BY ICP									1,3
Antimony, Total	3.	50.	49.	8.5	mg/Kg	EPA 6010	10/18/93	EN	
Arsenic, Total	0.5	200.	190.	0.	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	0.3	5.0	5.4	1.9	mg/Kg	EPA 6010	10/18/93	EN	
METALS SCAN BY ICP									1
Barium, Total	0.3	200.	190.	0.	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	5.0	4.8	2.1	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	1.	5.	5.	0.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	1.	20.	24.	82.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	1.	50.	51.	1.9	mg/Kg	EPA 6010	10/19/93	EN	
Copper, Total	10.	25.	26.	3.9	mg/Kg	EPA 6010	10/19/93	EN	
Iron, Total	10.	100.	120.	18.	mg/Kg	EPA 6010	10/19/93	EN	
Manganese, Total	0.5	50.	51.	2.	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	3.	50.	47.	4.2	mg/Kg	EPA 6010	10/19/93	EN	
Nickel, Total	3.	50.	54.	3.8	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	0.5	50.	49.	0.	mg/Kg	EPA 6010	10/19/93	EN	
Zinc, Total	10.	50.	54.	0.	mg/Kg	EPA 6010	10/19/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

(2) Sample Preparation on 10/18/93 by JF

(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/20/93

MH
CJ4830-1

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

SOIL ANALYTICAL RESULTS
METALS

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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Lab Number : CJ-4830-1
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	3.	280.	mg/Kg	EPA 6010	10/19/93	EN	1
Mercury, Total	0.01	0.42	mg/Kg	EPA 7470	10/19/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
Thallium, Total	15.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
METALS SCAN BY ICP							1,3
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/18/93	EN	
Arsenic, Total	0.5	1.5	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	0.3	2.3	mg/Kg	EPA 6010	10/18/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187; This report shall not be reproduced except in full without prior written approval from Coast-to-Coast Analytical Services, Inc.

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

(2) Sample Preparation on 10/18/93 by JF

(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/20/93

MH/wcc/mav
JJ155NHA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4830-1
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-5-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	63.	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	0.1	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	1.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Calcium, Total	20.	47000.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	1.	8.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	1.	4.	mg/Kg	EPA 6010	10/19/93	EN	
Copper, Total	10.	81.	mg/Kg	EPA 6010	10/19/93	EN	
Iron, Total	10.	6000.	mg/Kg	EPA 6010	10/19/93	EN	
Magnesium, Total	5.	41000.	mg/Kg	EPA 6010	10/19/93	EN	
Manganese, Total	0.5	150.	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Nickel, Total	3.	20.	mg/Kg	EPA 6010	10/19/93	EN	
Potassium, Total	50.	670.	mg/Kg	EPA 6010	10/19/93	EN	
Sodium, Total	25.	1300.	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	0.5	7.2	mg/Kg	EPA 6010	10/19/93	EN	
Zinc, Total	10.	380.	mg/Kg	EPA 6010	10/19/93	EN	
pH	0.1	9.5	Units	EPA 9045	10/15/93	RS	2

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187; This report shall not be reproduced except in full without prior written approval from Coast-to-Coast Analytical Services, Inc.

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

(2) Determined in 0.01M calcium chloride.

10/20/93

MH/wcc/mav
JJ155NHA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
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Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	3.	32.	mg/Kg	EPA 6010	10/19/93	EN	1
Mercury, Total	0.01	0.24	mg/Kg	EPA 7470	10/19/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	1
METALS SCAN BY ICP							1,3
Antimony, Total	3.	5.	mg/Kg	EPA 6010	10/18/93	EN	
Arsenic, Total	0.5	7.1	mg/Kg	EPA 6010	10/18/93	EN	
Silver, Total	0.3	1.3	mg/Kg	EPA 6010	10/18/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

(2) Sample Preparation on 10/18/93 by JF

(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/25/93

MH/wcc/abe/enn
JJ155NHA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4830-2
Project : #93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-6-0.5	Soil		10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	150.	mg/Kg	EPA 6010	10/19/93	EN	
Beryllium, Total	0.1	0.4	mg/Kg	EPA 6010	10/19/93	EN	
Cadmium, Total	1.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Calcium, Total	20.	7100.	mg/Kg	EPA 6010	10/19/93	EN	
Chromium, Total	1.	40.	mg/Kg	EPA 6010	10/19/93	EN	
Cobalt, Total	1.	11.	mg/Kg	EPA 6010	10/19/93	EN	
Copper, Total	10.	45.	mg/Kg	EPA 6010	10/19/93	EN	
Iron, Total	10.	23000.	mg/Kg	EPA 6010	10/19/93	EN	
Magnesium, Total	5.	7300.	mg/Kg	EPA 6010	10/19/93	EN	
Manganese, Total	0.5	420.	mg/Kg	EPA 6010	10/19/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/19/93	EN	
Nickel, Total	3.	42.	mg/Kg	EPA 6010	10/19/93	EN	
Potassium, Total	50.	1300.	mg/Kg	EPA 6010	10/19/93	EN	
Sodium, Total	25.	160.	mg/Kg	EPA 6010	10/19/93	EN	
Vanadium, Total	0.5	33.	mg/Kg	EPA 6010	10/19/93	EN	
Zinc, Total	10.	64.	mg/Kg	EPA 6010	10/19/93	EN	
pH	0.1	8.5	Units	EPA 9045	10/15/93	RS	2

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187; This report shall not be reproduced except in full without prior written approval from Coast-to-Coast Analytical Services, Inc.

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/15/93 by CLH using EPA 3050A

(2) Determined in 0.01M calcium chloride.

10/20/93

MH/mjv/mav
JJ155NHA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-6
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	17.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/7287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-7
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: CR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	25.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/8287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-8
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	17.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/92870
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-9
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	45.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/10287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-10
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	140.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH1/II287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

Lab Number : CJ-4794-11
Project : 93C0564 A

Analyzed : 10/14/93
Analyzed by: OR
Method : EPA 418.1

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
Total Recoverable Petroleum Hydrocarbons by IR		5.	340.	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

10/19/93
TPH '12287
MH/gps/mem
CJ479402870

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-4794-6
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	650.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.35	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	14.	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							4
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	6.7	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.6	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/14/93 by IAR using EPA 3050A
(4) Ag analyzed by EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/abe/emn/iar
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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Lab Number : CJ-4794-6
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-1 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	140.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	0.7	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	20.	21000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	27.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	48.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	10.	40000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	5.	24000.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	2.	780.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	150.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1600.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	30.	350.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	59.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	5.	180.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/abe/emn/iar
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-7
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	550.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.28	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							4
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	11.	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.4	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/14/93 by IAR using EPA 3050A
(4) Ag analyzed by EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-7
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	150.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	0.4	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	20.	53000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	31.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	9.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	28.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	10.	17000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	5.	7700.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	2.	370.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	35.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1400.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	30.	450.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	28.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	5.	260.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-8
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	52.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.15	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
Thallium, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							3
Antimony, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	3.8	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.8	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

(2) Sample Preparation on 10/13/93 by CLH

(3) Ag analyzed bu EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-8
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-2 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	94.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.5	ND	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	10.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	100.	71000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	15.	19.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	5.	8.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	15.	28.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	50.	17000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	25.	6100.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	10.	370.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	15.	32.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1400.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	150.	830.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	3.	21.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	25.	76.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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Lab Number : CJ-4794-9
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	140.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.29	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	5.	mg/Kg	EPA 6010	10/14/93	EN	1
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							3
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	7.4	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.3	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Ag analyzed bu EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
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Mary Havlicek, Ph.D.
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-9
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-3 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	170.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	0.5	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	5.	11000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	40.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	16.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	27.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	1.	23000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	5.	8600.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	0.3	510.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	300.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	62.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1100.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	30.	2000.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	39.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	3.	220.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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Lab Number : CJ-4794-10
Project : 93C0564 A

CLIENT: Joe Morgan
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500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	710.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.33	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							3
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	24.	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.5	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

(2) Sample Preparation on 10/13/93 by CLH

(3) Ag analyzed by EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-10
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (0.5')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	180.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	0.4	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	5.	37000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	33.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	10.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	55.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	1.	21000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	5.	8100.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	0.3	480.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	300.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	36.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1400.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	30.	570.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	32.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	3.	290.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-4794-11
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Lead, Total	5.	2400.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	1.3	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							4
Antimony, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	38.	mg/Kg	EPA 6010	10/14/93	EN	
Silver, Total	0.3	1.7	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/13/93 by IAR using 3050A
(4) Ag analyzed bu EPA 7760, As by EPA 7060.

10/19/93

MH/wcc/enn
JJ135NHA*A

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Lab Number : CJ-4794-11
Project : 93C0564 A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
S-4 (3.0')	Soil	Charley M. Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
METALS SCAN BY ICP							1
Barium, Total	0.3	160.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.5	ND	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	10.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	100.	61000.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	15.	31.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	5.	13.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	15.	48.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	50.	19000.	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	25.	9100.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	10.	270.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	15.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	15.	40.	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	1300.	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	150.	630.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	3.	27.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	15.	500.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn
JJ135NHA*A

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	5.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	ND	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP							
Antimony, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	ND	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/14/93 by IAR using EPA 3050A

10/19/93

MH/wcc/erm/iar
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
METALS SCAN BY ICP							1
Barium, Total	0.3	ND	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	ND	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Calcium, Total	20.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	10.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Magnesium, Total	5.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	2.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Potassium, Total	50.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Sodium, Total	30.	ND	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	ND	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	5.	ND	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn/iar
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED
MATRIX SPIKE	Solid		

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Total	0.35	0.50	0.92	114.	mg/Kg	EPA 7470	10/13/93	RB	1
Selenium, Total	14.	200.	210.	98.	mg/Kg	EPA 6010	10/14/93	EN	2
Thallium, Total	ND	200.	180.	90.	mg/Kg	EPA 6010	10/14/93	EN	3
METALS SCAN BY ICP									
Arsenic, Total	6.7	200.	200.	97.	mg/Kg	EPA 6010	10/14/93	EN	
METALS SCAN BY ICP									3
Barium, Total	140.	200.	310.	85.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.7	5.0	5.1	88.	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	ND	5.	6.	120.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	27.	50.	69.	84.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	48.	25.	73.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	ND	50.	41.	82.	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	150.	50.	180.	60.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	59.	50.	95.	72.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	180.	50.	210.	60.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by CLH
(2) Sample Preparation on 10/14/93 by IAR using EPA 3050A
(3) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enm/iar
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Mercury, Total	0.35	0.50	0.82	19.	mg/Kg	EPA 7470	10/13/93	RB	1
Selenium, Total	14.	200.	210.	0.	mg/Kg	EPA 6010	10/14/93	EN	2
Thallium, Total	ND	200.	180.	0.	mg/Kg	EPA 6010	10/14/93	EN	3
METALS SCAN BY ICP									
Arsenic, Total	6.7	200.	200.	0.	mg/Kg	EPA 6010	10/14/93	EN	
METALS SCAN BY ICP									3
Barium, Total	140.	200.	320.	5.7	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.7	5.0	5.1	0.	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	ND	5.	6.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	27.	50.	68.	2.4	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	48.	25.	66.	33.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	ND	50.	41.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	150.	50.	170.	40.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	59.	50.	95.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	180.	50.	190.	100.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by CLH
(2) Sample Preparation on 10/14/93 by IAR using EPA 3050A
(3) Sample Preparation on 10/13/93 by IAR using EPA 3050A

10/19/93

MH/wcc/enn/iar
CJ4794-6

Respectfully submitted,
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Mary Havlicek, Ph.D.
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4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	5.	50.	50.	100.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.50	0.59	118.	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	200.	200.	100.	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	3.	200.	200.	100.	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP									
Antimony, Total	3.	50.	48.	96.	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	200.	200.	100.	mg/Kg	EPA 6010	10/14/93	EN	
METALS SCAN BY ICP									1
Barium, Total	0.3	200.	200.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	5.0	4.9	98.	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	5.	5.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	20.	20.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	50.	51.	102.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	25.	25.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	10.	100.	100.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	2.	50.	50.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	3.	50.	44.	88.	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	50.	51.	102.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	50.	50.	100.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	5.	50.	52.	104.	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/14/93 by IAR using EPA 3050A

10/19/93

MH/wcc/erm/iar
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JJ135NHA*A

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Lead, Total	5.	50.	51.	2.	mg/Kg	EPA 6010	10/14/93	EN	1
Mercury, Total	0.01	0.50	0.52	13.	mg/Kg	EPA 7470	10/13/93	RB	2
Selenium, Total	3.	200.	200.	0.	mg/Kg	EPA 6010	10/14/93	EN	3
Thallium, Total	3.	200.	200.	0.	mg/Kg	EPA 6010	10/14/93	EN	1
METALS SCAN BY ICP									
Antimony, Total	3.	50.	48.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Arsenic, Total	0.5	200.	200.	0.	mg/Kg	EPA 6010	10/14/93	EN	
METALS SCAN BY ICP									1
Barium, Total	0.3	200.	200.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Beryllium, Total	0.1	5.0	4.9	0.	mg/Kg	EPA 6010	10/14/93	EN	
Cadmium, Total	2.	5.	5.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Chromium, Total	3.	20.	20.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Cobalt, Total	1.	50.	51.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Copper, Total	3.	25.	25.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Iron, Total	10.	100.	100.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Manganese, Total	2.	50.	50.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Molybdenum, Total	3.	50.	46.	4.4	mg/Kg	EPA 6010	10/14/93	EN	
Nickel, Total	3.	50.	51.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Vanadium, Total	0.5	50.	50.	0.	mg/Kg	EPA 6010	10/14/93	EN	
Zinc, Total	5.	50.	51.	1.9	mg/Kg	EPA 6010	10/14/93	EN	

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 10/13/93 by IAR using EPA 3050A
(2) Sample Preparation on 10/13/93 by CLH
(3) Sample Preparation on 10/14/93 by IAR using EPA 3050A

10/19/93

MH/wcc/emn/iar
CJ4794-6

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

SOIL ANALYTICAL RESULTS
CAL WET EXTRACTION

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-1
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-7) S-2 0.5'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate Digest for soluble metals				CAC T22	11/12/93	CC	
Lead, Soluble	0.05	10.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-2
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-8) S-2 3.0'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate				CAC T22	11/12/93	CC	
Digest for soluble metals							
Lead, Soluble	0.05	0.42	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-3
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-9) S-3 0.5'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate				CAC T22	11/12/93	CC	
Digest for soluble metals							
Lead, Soluble	0.05	7.1	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-4
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-10) S-4 0.5'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate				CAC T22	11/12/93	CC	
Digest for soluble metals							
Lead, Soluble	0.05	72.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-5
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-11) S-4 3.0'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate Digest for soluble metals				CAC T22	11/12/93	CC	
Lead, Soluble	0.05	0.91	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/emn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

Lab Number : CJ-5358-6
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4830-1) S-5 0.5'	Solid	Kimberly Bradley	10/11/93	10/12/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate				CAC T22	11/12/93	CC	
Digest for soluble metals							
Lead, Soluble	0.05	1.5	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

Lab Number : CJ-5358-7
Project : 93C0564A

CLIENT: Joe Morgan
Woodward-Clyde Consultants
500 12th St. Ste. 100
Oakland, CA 94607

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
(CJ4794-6) S-1 0.5'	Solid	Kimberly Bradley	10/11/93	11/09/93

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
CAL WET extraction with citrate				CAC T22	11/12/93	CC	
Chromium, Soluble	0.05	0.25	mg/L	EPA 6010	11/16/93	EN	1
Digest for soluble metals							
Lead, Soluble	0.05	43.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187

*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
JK12ECA

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JK152NMA

CLIENT: Coast-to-Coast Analytical Services, Inc.

METHOD BLANK
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
METHOD BLANK	Solid			

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTE
Chromium, Soluble	0.05	ND	mg/L	EPA 6010	11/16/93	EN	1
Lead, Soluble	0.05	ND	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/emn
CJ5358-7

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JK152NMA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
MATRIX SPIKE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Chromium, Soluble	0.25	0.40	0.60	88.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
CJ5358-7

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805)389-1438

QC Batch ID: JK152NMA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC MATRIX SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
MATRIX SPIKE DUPLICATE	Solid			

CONSTITUENT	ORIGINAL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Chromium, Soluble	0.25	0.40	0.59	2.9	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
CJ5358-7

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JK152NMA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%REC	UNITS	METHOD	ANALYZED	BY	NOTE
Chromium, Soluble	0.05	0.40	0.38	95.	mg/L	EPA 6010	11/16/93	EN	1
Lead, Soluble	0.05	1.0	0.99	99.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #10187
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/enn
CJ5358-7

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

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SoCal Division (Camarillo Laboratory) (805) 389-1353
4765 Calle Quetzal, Camarillo, California 93012 FAX (805) 389-1438

QC Batch ID: JK152NMA

CLIENT: Coast-to-Coast Analytical Services, Inc.

QC SPIKE
REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
QC SPIKE DUPLICATE	Solid			

CONSTITUENT	*PQL	SPIKE	RESULT	%DIFF	UNITS	METHOD	ANALYZED	BY	NOTE
Chromium, Soluble	0.05	0.40	0.38	0.	mg/L	EPA 6010	11/16/93	EN	1
Lead, Soluble	0.05	1.0	0.97	2.	mg/L	EPA 6010	11/16/93	EN	1

Lab Certifications: CAELAP #1598 & #1783; UTELAP #E-142; AZELAP #AZ0162; A2LA #0136-01; L.A.Co.CSD #1018
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 11/15/93 by CLH

11/18/93

MH/wcc/ernn
CJ5358-7

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.
President

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-401
(510) 893-3600

RUSH

Chain of Custody Record

PROJECT NO. 93C0564 A

SAMPLERS: (Signature) Cheryl M. Bradley

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8260	EPA Method 8270	EPA Method 418.1	EPA Method 6/7000	CALD HP Pec	Allison in Sd 10/12/93 1110				Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
10/11/93	900	S-1 (0.5')	S	X	X	X	X				-6		1	CJ4794
10/11/93	930	S-2 (0.5')	S	X	X	X	X				-7		1	
10/11/93	1000	S-2 (3.0')	S	X	X	X	X				-8		1	RESULTS
10/11/93	1030	S-3 (0.5')	S	X	X	X	X				-9		1	TO;
10/11/93	1100	S-4 (0.5')	S	X	X	X	X				-10		1	JOE MORGAN-
10/11/93	1130	S-4 (3.0)	S	X	X	X	X				-11		1	WCC

TOTAL NUMBER OF CONTAINERS: 6

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Kimberly M. Bradley	10/11/93 1232	[signature]	[signature]		

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		UPS	[signature]	10/12/93 1130

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 93C0564A

SAMPLERS: (Signature)

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method TO-14	EPA Method 8260	EPA Method 8270	EPA Method	TPH oil grease (IR at 418.1)	Metals (6010/7000 series)	pH					Number of Containers	REMARKS (Sample preservation, handling procedures, etc.) CJ4830
10/11/93	1400	S-5-0.5	S		X	X		X	X	X					1	
10/11/93	~~1430~~ 1515	S-6-0.5	S		X	X		X	X	X					1	5 day T.A.T.
	1517	619	~~A~~	X											1	Results to
	1625	483	~~A~~	X											1	Joe Morgan
	1322	474	~~A~~	X											1	
	1444	454	A	X											1	

RUSH

7646695280

7646695291

TOTAL NUMBER OF CONTAINERS: 6

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
①	10/11/93 1659	③ Alison Abraham	Alison Abraham	10/12/93	

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER # (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
World Courier		454 ②		10/13/93 1230

APPENDIX B

APPENDIX B

Boring Logs

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils	Gravel And Gravely Soils		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand And Sandy Soils		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	Description
Fine Grained Soils	Silts And Clays LL < 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL > 50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

SYMBOLS

- Standard penetration split spoon sample
- Modified California (Porter) sample
- Shelby tube sample
- Water level observed in boring
- Stable water level
- Blank casing
- Screened Casing
- Cement grout
- Bentonite
- Filter Pack

Visual Relative Moisture Content
Increasing Moisture Content

Dry
Damp
Moist
Wet
Saturated

Note: The lines separating strata on the logs represent approximate boundaries only. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

HARZA
Consulting Engineers & Scientists

BORING LOG LEGEND

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	FIGURE NO
K615M	August 1994	A-1

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	Not Enc.	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION DESCRIPTION AND REMARKS	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
FILL: Sand and Rock, dark gray and brown, damp, coarse-grained, trace clay and silt.				11	0		
FILL: CLAYEY SAND (SC), orange-brown, wet, coarse-grained.		5		8	0		
Bottom of Boring = 6.5 Feet Notes: 1. The stratification lines represent the approximate boundary between soil type and the transition may be gradual. 2. Boring backfilled with cement grout to grade.							

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EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615M	August 1994	G-1

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	3 Feet	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
FILL: Sand and Rock, multicolored, dry, medium- to coarse-grained, with debris (concrete, wood).							
As above, damp, slight odor.				13	0		
As above, black at 5.5 feet, wet, strong solvent odor.		5		14	411		
Bottom of Boring = 6.5 Feet							

Notes:
1. The stratification lines represent the approximate boundary between soil types and the transition may be gradual.
2. Boring backfilled with cement grout to grade.

HARZA
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EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615M	August 1994	G-2

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	2.5 Feet	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
FILL: Sand and Gravel, multicolored, dry, coarse-grained.							
As above, black, wet, strong solvent odor at 2 feet.				39	511		
As above, black, wet, strong solvent odor.		5		14	912		
Bottom of Boring = 6.5 Feet Notes: 1. The stratification lines represent the approximate boundary between soil type and the transition may be gradual. 2. Boring backfilled with cement grout to grade.							

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EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615M	August 1994	G-3

DRILL RIG	CME 75 HSA	SURFACE ELEVATION		LOGGED BY	TCM
DEPTH TO GROUNDWATER	Not Enc.	BORING DIAMETER	8-inch	DATE DRILLED	7/26/94

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
FILL: Sand and Rock, gray and multicolored, dry, trace debris (wood, concrete).							
As above, dry/damp.				20	0		
As above, damp, trace silt, less debris.		5		21	0		
Bottom of Boring = 6.5 Feet Notes: 1. The stratification lines represent the approximate boundary between soil type and the transition may be gradual. 2. Boring backfilled with cement grout to grade.							

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EXPLORATORY BORING LOG

FULLER-O'BRIEN PAINTS
South San Francisco, California

PROJECT NO.	DATE	BORING NO
K615M	August 1994	G-4

APPENDIX C

APPENDIX C

Certified Analytical Results

American Environmental Network

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: TACIA MILLER
CLIENT PROJ. ID: K615-M
CLIENT PROJ. NAME: FULLER O'BRIEN

REPORT DATE: 08/29/94

DATE(S) SAMPLED: 07/26/94

DATE RECEIVED: 07/27/94

AEN WORK ORDER: 9407303

PROJECT SUMMARY:

On July 27, 1994, this laboratory received 8 soil sample(s).

Client requested samples be analyzed for inorganic and organic parameters. Portions of samples for Total Organic Carbon were subcontracted to a DOHS certified laboratory. Subcontract report is included with this report. On August 10, 1994, client requested additional organic analysis on 4 samples. On August 12, 1994, client requested additional organic analysis on remaining 4 samples. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARZA

SAMPLE ID: G-1/2'
AEN LAB NO: 9407303-01
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	4 *	1	mg/kg	08/23/94
TPH as Oil	GC-FID	ND	5	mg/kg	08/23/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	5 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	170 *	1	mg/kg	08/04/94
Copper	EPA 6010	44 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	6 *	1	mg/kg	08/04/94
Nickel	EPA 6010	270 *	1	mg/kg	08/04/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	08/04/94
Zinc	EPA 6010	59 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	08/05/94
Benzene	71-43-2	ND	5	ug/kg	08/05/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	08/05/94
Bromoform	75-25-2	ND	5	ug/kg	08/05/94
Bromomethane	74-83-9	ND	10	ug/kg	08/05/94
2-Butanone	78-93-3	ND	100	ug/kg	08/05/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	08/05/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	08/05/94
Chlorobenzene	108-90-7	ND	5	ug/kg	08/05/94
Chloroethane	75-00-3	ND	10	ug/kg	08/05/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	08/05/94
Chloroform	67-66-3	ND	5	ug/kg	08/05/94
Chloromethane	74-87-3	ND	10	ug/kg	08/05/94

HARZA

SAMPLE ID: G-1/2'
AEN LAB NO: 9407303-01
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	5	ug/kg	08/05/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	08/05/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	08/05/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	08/05/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	08/05/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	08/05/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	08/05/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	08/05/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	08/05/94
Ethylbenzene	100-41-4	ND	5	ug/kg	08/05/94
2-Hexanone	591-78-6	ND	50	ug/kg	08/05/94
Methylene Chloride	75-09-2	ND	10	ug/kg	08/05/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	08/05/94
Styrene	100-42-5	ND	5	ug/kg	08/05/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	08/05/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	08/05/94
Toluene	108-88-3	ND	5	ug/kg	08/05/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	08/05/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	08/05/94
Trichloroethene	79-01-6	ND	5	ug/kg	08/05/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	08/05/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	08/05/94
Xylenes Total	1330-20-7	ND	10	ug/kg	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/03/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	08/05/94
Acenaphthylene	208-96-8	ND	330	ug/kg	08/05/94
Anthracene	120-12-7	ND	330	ug/kg	08/05/94
Benzidine	92-87-5	ND	1600	ug/kg	08/05/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	08/05/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	08/05/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	08/05/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	08/05/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	08/05/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	08/05/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	08/05/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	08/05/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	08/05/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	08/05/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	08/05/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	08/05/94

HARZA

SAMPLE ID: G-1/2'
AEN LAB NO: 9407303-01
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	08/05/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	08/05/94
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	08/05/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	08/05/94
Chrysene	218-01-9	ND	330	ug/kg	08/05/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	08/05/94
Dibenzofuran	132-64-9	ND	330	ug/kg	08/05/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	08/05/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	08/05/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	08/05/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	08/05/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	08/05/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	08/05/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	08/05/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	08/05/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	08/05/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	08/05/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	08/05/94
Fluoranthene	206-44-0	ND	330	ug/kg	08/05/94
Fluorene	86-73-7	ND	330	ug/kg	08/05/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	08/05/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	08/05/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	08/05/94
Hexachloroethane	67-72-1	ND	330	ug/kg	08/05/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	08/05/94
Isophorone	78-59-1	ND	330	ug/kg	08/05/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	08/05/94
Naphthalene	91-20-3	ND	330	ug/kg	08/05/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	08/05/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	08/05/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	08/05/94
Nitrobenzene	98-95-3	ND	330	ug/kg	08/05/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	08/05/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	08/05/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	08/05/94
Phenanthrene	85-01-8	ND	330	ug/kg	08/05/94
Pyrene	129-00-0	ND	330	ug/kg	08/05/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	08/05/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	08/05/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	08/05/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	08/05/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	08/05/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	08/05/94

HARZA

SAMPLE ID: G-1/2'
AEN LAB NO: 9407303-01
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	08/05/94
2-Methylphenol	95-48-7	ND	330	ug/kg	08/05/94
4-Methylphenol	106-44-5	ND	330	ug/kg	08/05/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	08/05/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	08/05/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	08/05/94
Phenol	108-95-2	ND	330	ug/kg	08/05/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	08/05/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	08/05/94

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-1/5'
AEN LAB NO: 9407303-02
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	9 *	1	mg/kg	08/23/94
TPH as Oil	GC-FID	85 *	5	mg/kg	08/23/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	2 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	110 *	1	mg/kg	08/04/94
Copper	EPA 6010	24 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	5 *	1	mg/kg	08/04/94
Nickel	EPA 6010	150 *	1	mg/kg	08/04/94
Silver	EPA 6010	ND	0.1	mg/kg	08/04/94
Zinc	EPA 6010	42 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	500	ug/kg	08/06/94
Benzene	71-43-2	ND	30	ug/kg	08/06/94
Bromodichloromethane	75-27-4	ND	30	ug/kg	08/06/94
Bromoform	75-25-2	ND	30	ug/kg	08/06/94
Bromomethane	74-83-9	ND	50	ug/kg	08/06/94
2-Butanone	78-93-3	ND	500	ug/kg	08/06/94
Carbon Disulfide	75-15-0	ND	50	ug/kg	08/06/94
Carbon Tetrachloride	56-23-5	ND	30	ug/kg	08/06/94
Chlorobenzene	108-90-7	ND	30	ug/kg	08/06/94
Chloroethane	75-00-3	ND	50	ug/kg	08/06/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	50	ug/kg	08/06/94
Chloroform	67-66-3	ND	30	ug/kg	08/06/94
Chloromethane	74-87-3	ND	50	ug/kg	08/06/94

HARZA

SAMPLE ID: G-1/5'
AEN LAB NO: 9407303-02
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	30	ug/kg	08/06/94
1,1-Dichloroethane	75-43-3	ND	30	ug/kg	08/06/94
1,2-Dichloroethane	107-06-2	ND	30	ug/kg	08/06/94
1,1-Dichloroethene	75-35-4	ND	30	ug/kg	08/06/94
cis-1,2-Dichloroethene	156-59-2	ND	30	ug/kg	08/06/94
trans-1,2-Dichloroethene	156-60-5	ND	30	ug/kg	08/06/94
1,2-Dichloropropane	78-87-5	ND	30	ug/kg	08/06/94
cis-1,3-Dichloropropene	10061-01-5	ND	30	ug/kg	08/06/94
trans-1,3-Dichloropropene	10061-02-6	ND	30	ug/kg	08/06/94
Ethylbenzene	100-41-4	ND	30	ug/kg	08/06/94
2-Hexanone	591-78-6	ND	300	ug/kg	08/06/94
Methylene Chloride	75-09-2	ND	90	ug/kg	08/06/94
4-Methyl-2-pentanone	108-10-1	ND	300	ug/kg	08/06/94
Styrene	100-42-5	ND	30	ug/kg	08/06/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	30	ug/kg	08/06/94
Tetrachloroethene	127-18-4	ND	30	ug/kg	08/06/94
Toluene	108-88-3	ND	30	ug/kg	08/06/94
1,1,1-Trichloroethane	71-55-6	ND	30	ug/kg	08/06/94
1,1,2-Trichloroethane	79-00-5	ND	30	ug/kg	08/06/94
Trichloroethene	79-01-6	ND	30	ug/kg	08/06/94
Vinyl Acetate	108-05-4	ND	300	ug/kg	08/06/94
Vinyl Chloride	75-01-4	ND	50	ug/kg	08/06/94
Xylenes Total	1330-20-7	67 *	50	ug/kg	08/06/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	08/03/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	330	ug/kg	08/19/94
Acenaphthylene	208-96-8	ND	330	ug/kg	08/19/94
Anthracene	120-12-7	ND	330	ug/kg	08/19/94
Benzidine	92-87-5	ND	1600	ug/kg	08/19/94
Benzoic Acid	65-85-0	ND	1600	ug/kg	08/19/94
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	08/19/94
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	08/19/94
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	08/19/94
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	08/19/94
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	08/19/94
Benzyl Alcohol	100-51-6	ND	660	ug/kg	08/19/94
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	08/19/94
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	08/19/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	08/19/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	08/19/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	08/19/94

HARZA

SAMPLE ID: G-1/5'
AEN LAB NO: 9407303-02
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	08/19/94
4-Chloroaniline	106-47-8	ND	660	ug/kg	08/19/94
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	08/19/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	08/19/94
Chrysene	218-01-9	ND	330	ug/kg	08/19/94
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	08/19/94
Dibenzofuran	132-64-9	ND	330	ug/kg	08/19/94
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	08/19/94
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	08/19/94
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	08/19/94
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	08/19/94
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	08/19/94
Diethyl Phthalate	84-66-2	ND	330	ug/kg	08/19/94
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	08/19/94
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	08/19/94
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	08/19/94
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	08/19/94
1,2-Diphenylhydrazine	122-66-7	ND	330	ug/kg	08/19/94
Fluoranthene	206-44-0	ND	330	ug/kg	08/19/94
Fluorene	86-73-7	ND	330	ug/kg	08/19/94
Hexachlorobenzene	118-74-1	ND	330	ug/kg	08/19/94
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	08/19/94
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	08/19/94
Hexachloroethane	67-72-1	ND	330	ug/kg	08/19/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	08/19/94
Isophorone	78-59-1	ND	330	ug/kg	08/19/94
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	08/19/94
Naphthalene	91-20-3	ND	330	ug/kg	08/19/94
2-Nitroaniline	88-74-4	ND	1600	ug/kg	08/19/94
3-Nitroaniline	99-09-2	ND	1600	ug/kg	08/19/94
4-Nitroaniline	100-01-6	ND	1600	ug/kg	08/19/94
Nitrobenzene	98-95-3	ND	330	ug/kg	08/19/94
N-Nitrosodimethylamine	62-75-9	ND	330	ug/kg	08/19/94
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	08/19/94
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	08/19/94
Phenanthrene	85-01-8	ND	330	ug/kg	08/19/94
Pyrene	129-00-0	ND	330	ug/kg	08/19/94
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	08/19/94
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	08/19/94
2-Chlorophenol	95-57-8	ND	330	ug/kg	08/19/94
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	08/19/94
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	08/19/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	08/19/94

HARZA

SAMPLE ID: G-1/5'
AEN LAB NO: 9407303-02
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	08/19/94
2-Methylphenol	95-48-7	ND	330	ug/kg	08/19/94
4-Methylphenol	106-44-5	ND	330	ug/kg	08/19/94
2-Nitrophenol	88-75-5	ND	330	ug/kg	08/19/94
4-Nitrophenol	100-02-7	ND	1600	ug/kg	08/19/94
Pentachlorophenol	87-86-5	ND	1600	ug/kg	08/19/94
Phenol	108-95-2	ND	330	ug/kg	08/19/94
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	08/19/94
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	08/19/94

RLs elevated for 8240 analytes due to matrix interference. RL elevated for Methylene Chloride due to background contamination.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-2/2'
AEN LAB NO: 9407303-03
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	26 *	1	mg/kg	08/24/94
TPH as Oil	GC-FID	200 *	5	mg/kg	08/24/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	28 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	27 *	1	mg/kg	08/04/94
Copper	EPA 6010	31 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	160 *	1	mg/kg	08/04/94
Nickel	EPA 6010	31 *	1	mg/kg	08/04/94
Silver	EPA 6010	0.3 *	0.1	mg/kg	08/04/94
Zinc	EPA 6010	240 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	08/05/94
Benzene	71-43-2	ND	5	ug/kg	08/05/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	08/05/94
Bromoform	75-25-2	ND	5	ug/kg	08/05/94
Bromomethane	74-83-9	ND	10	ug/kg	08/05/94
2-Butanone	78-93-3	ND	100	ug/kg	08/05/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	08/05/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	08/05/94
Chlorobenzene	108-90-7	ND	5	ug/kg	08/05/94
Chloroethane	75-00-3	ND	10	ug/kg	08/05/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	08/05/94
Chloroform	67-66-3	ND	5	ug/kg	08/05/94
Chloromethane	74-87-3	ND	10	ug/kg	08/05/94

HARZA

SAMPLE ID: G-2/2'
AEN LAB NO: 9407303-03
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	5	ug/kg	08/05/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	08/05/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	08/05/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	08/05/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	08/05/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	08/05/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	08/05/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	08/05/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	08/05/94
Ethylbenzene	100-41-4	ND	5	ug/kg	08/05/94
2-Hexanone	591-78-6	ND	50	ug/kg	08/05/94
Methylene Chloride	75-09-2	ND	20	ug/kg	08/05/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	08/05/94
Styrene	100-42-5	ND	5	ug/kg	08/05/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	08/05/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	08/05/94
Toluene	108-88-3	ND	5	ug/kg	08/05/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	08/05/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	08/05/94
Trichloroethene	79-01-6	ND	5	ug/kg	08/05/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	08/05/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	08/05/94
Xylenes Total	1330-20-7	ND	10	ug/kg	08/05/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/03/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	3300	ug/kg	08/19/94
Acenaphthylene	208-96-8	ND	3300	ug/kg	08/19/94
Anthracene	120-12-7	ND	3300	ug/kg	08/19/94
Benzidine	92-87-5	ND	16000	ug/kg	08/19/94
Benzoic Acid	65-85-0	ND	16000	ug/kg	08/19/94
Benzo(a)anthracene	56-55-3	ND	3300	ug/kg	08/19/94
Benzo(b)fluoranthene	205-99-2	ND	3300	ug/kg	08/19/94
Benzo(k)fluoranthene	207-08-9	ND	3300	ug/kg	08/19/94
Benzo(g,h,i)perylene	191-24-2	ND	3300	ug/kg	08/19/94
Benzo(a)pyrene	50-32-8	ND	3300	ug/kg	08/19/94
Benzyl Alcohol	100-51-6	ND	6600	ug/kg	08/19/94
Bis(2-chloroethoxy)methane	111-91-1	ND	3300	ug/kg	08/19/94
Bis(2-choroethyl) Ether	111-44-4	ND	3300	ug/kg	08/19/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	3300	ug/kg	08/19/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	3300	ug/kg	08/19/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	3300	ug/kg	08/19/94

HARZA

SAMPLE ID: G-2/2'
AEN LAB NO: 9407303-03
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	3300	ug/kg	08/19/94
4-Chloroaniline	106-47-8	ND	6600	ug/kg	08/19/94
2-Chloronaphthalene	91-58-7	ND	3300	ug/kg	08/19/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	3300	ug/kg	08/19/94
Chrysene	218-01-9	ND	3300	ug/kg	08/19/94
Dibenzo(a,h)anthracene	53-70-3	ND	3300	ug/kg	08/19/94
Dibenzofuran	132-64-9	ND	3300	ug/kg	08/19/94
Di-n-butyl Phthalate	84-74-2	ND	3300	ug/kg	08/19/94
1,2-Dichlorobenzene	95-50-1	ND	3300	ug/kg	08/19/94
1,3-Dichlorobenzene	541-73-1	ND	3300	ug/kg	08/19/94
1,4-Dichlorobenzene	106-46-7	ND	3300	ug/kg	08/19/94
3,3'-Dichlorobenzidine	91-94-1	ND	6600	ug/kg	08/19/94
Diethyl Phthalate	84-66-2	ND	3300	ug/kg	08/19/94
Dimethyl Phthalate	131-11-3	ND	3300	ug/kg	08/19/94
2,4-Dinitrotoluene	121-14-2	ND	3300	ug/kg	08/19/94
2,6-Dinitrotoluene	606-20-2	ND	3300	ug/kg	08/19/94
Di-n-octyl Phthalate	117-84-0	ND	3300	ug/kg	08/19/94
1,2-Diphenylhydrazine	122-66-7	ND	3300	ug/kg	08/19/94
Fluoranthene	206-44-0	ND	3300	ug/kg	08/19/94
Fluorene	86-73-7	ND	3300	ug/kg	08/19/94
Hexachlorobenzene	118-74-1	ND	3300	ug/kg	08/19/94
Hexachlorobutadiene	87-68-3	ND	3300	ug/kg	08/19/94
Hexachlorocyclopentadiene	77-47-4	ND	3300	ug/kg	08/19/94
Hexachloroethane	67-72-1	ND	3300	ug/kg	08/19/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	3300	ug/kg	08/19/94
Isophorone	78-59-1	ND	3300	ug/kg	08/19/94
2-Methylnaphthalene	91-57-6	ND	3300	ug/kg	08/19/94
Naphthalene	91-20-3	ND	3300	ug/kg	08/19/94
2-Nitroaniline	88-74-4	ND	16000	ug/kg	08/19/94
3-Nitroaniline	99-09-2	ND	16000	ug/kg	08/19/94
4-Nitroaniline	100-01-6	ND	16000	ug/kg	08/19/94
Nitrobenzene	98-95-3	ND	3300	ug/kg	08/19/94
N-Nitrosodimethylamine	62-75-9	ND	3300	ug/kg	08/19/94
N-Nitrosodiphenylamine	86-30-6	ND	3300	ug/kg	08/19/94
N-Nitrosodi-n-propylamine	621-64-7	ND	3300	ug/kg	08/19/94
Phenanthrene	85-01-8	ND	3300	ug/kg	08/19/94
Pyrene	129-00-0	ND	3300	ug/kg	08/19/94
1,2,4-Trichlorobenzene	120-82-1	ND	3300	ug/kg	08/19/94
4-Chloro-3-methylphenol	59-50-7	ND	3300	ug/kg	08/19/94
2-Chlorophenol	95-57-8	ND	3300	ug/kg	08/19/94
2,4-Dichlorophenol	120-83-2	ND	3300	ug/kg	08/19/94
2,4-Dimethylphenol	105-67-9	ND	3300	ug/kg	08/19/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	16000	ug/kg	08/19/94

HARZA

SAMPLE ID: G-2/2'
AEN LAB NO: 9407303-03
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	16000	ug/kg	08/19/94
2-Methylphenol	95-48-7	ND	3300	ug/kg	08/19/94
4-Methylphenol	106-44-5	ND	3300	ug/kg	08/19/94
2-Nitrophenol	88-75-5	ND	3300	ug/kg	08/19/94
4-Nitrophenol	100-02-7	ND	16000	ug/kg	08/19/94
Pentachlorophenol	87-86-5	ND	16000	ug/kg	08/19/94
Phenol	108-95-2	ND	3300	ug/kg	08/19/94
2,4,5-Trichlorophenol	95-95-4	ND	3300	ug/kg	08/19/94
2,4,6-Trichlorophenol	88-06-2	ND	3300	ug/kg	08/19/94

RLs elevated for 8270 analytes due to matrix interference. RL elevated for Methylene Chloride due to background contamination.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-2/5'
AEN LAB NO: 9407303-04
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	11,000 *	1	mg/kg	08/23/94
TPH as Oil	GC-FID	12,000 *	5	mg/kg	08/23/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	5 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	1	mg/kg	08/05/94
Chromium	EPA 6010	11 *	1	mg/kg	08/04/94
Copper	EPA 6010	24 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	120 *	10	mg/kg	08/05/94
Nickel	EPA 6010	19 *	10	mg/kg	08/05/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	08/04/94
Zinc	EPA 6010	160 *	10	mg/kg	08/05/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100000	ug/kg	08/08/94
Benzene	71-43-2	ND	5000	ug/kg	08/08/94
Bromodichloromethane	75-27-4	ND	5000	ug/kg	08/08/94
Bromoform	75-25-2	ND	5000	ug/kg	08/08/94
Bromomethane	74-83-9	ND	10000	ug/kg	08/08/94
2-Butanone	78-93-3	ND	100000	ug/kg	08/08/94
Carbon Disulfide	75-15-0	ND	10000	ug/kg	08/08/94
Carbon Tetrachloride	56-23-5	ND	5000	ug/kg	08/08/94
Chlorobenzene	108-90-7	ND	5000	ug/kg	08/08/94
Chloroethane	75-00-3	ND	10000	ug/kg	08/08/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10000	ug/kg	08/08/94
Chloroform	67-66-3	ND	5000	ug/kg	08/08/94
Chloromethane	74-87-3	ND	10000	ug/kg	08/08/94

HARZA

SAMPLE ID: G-2/5'
AEN LAB NO: 9407303-04
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	5000	ug/kg	08/08/94
1,1-Dichloroethane	75-43-3	ND	5000	ug/kg	08/08/94
1,2-Dichloroethane	107-06-2	ND	5000	ug/kg	08/08/94
1,1-Dichloroethene	75-35-4	ND	5000	ug/kg	08/08/94
cis-1,2-Dichloroethene	156-59-2	ND	5000	ug/kg	08/08/94
trans-1,2-Dichloroethene	156-60-5	ND	5000	ug/kg	08/08/94
1,2-Dichloropropane	78-87-5	ND	5000	ug/kg	08/08/94
cis-1,3-Dichloropropene	10061-01-5	ND	5000	ug/kg	08/08/94
trans-1,3-Dichloropropene	10061-02-6	ND	5000	ug/kg	08/08/94
Ethylbenzene	100-41-4	200,000 *	5000	ug/kg	08/08/94
2-Hexanone	591-78-6	ND	50000	ug/kg	08/08/94
Methylene Chloride	75-09-2	ND	5000	ug/kg	08/08/94
4-Methyl-2-pentanone	108-10-1	ND	50000	ug/kg	08/08/94
Styrene	100-42-5	ND	5000	ug/kg	08/08/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5000	ug/kg	08/08/94
Tetrachloroethene	127-18-4	ND	5000	ug/kg	08/08/94
Toluene	108-88-3	78,000 *	5000	ug/kg	08/08/94
1,1,1-Trichloroethane	71-55-6	ND	5000	ug/kg	08/08/94
1,1,2-Trichloroethane	79-00-5	ND	5000	ug/kg	08/08/94
Trichloroethene	79-01-6	ND	5000	ug/kg	08/08/94
Vinyl Acetate	108-05-4	ND	50000	ug/kg	08/08/94
Vinyl Chloride	75-01-4	ND	10000	ug/kg	08/08/94
Xylenes Total	1330-20-7	3,500,000 *	200000	ug/kg	08/08/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	08/03/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	1300	ug/kg	08/19/94
Acenaphthylene	208-96-8	ND	1300	ug/kg	08/19/94
Anthracene	120-12-7	ND	1300	ug/kg	08/19/94
Benzidine	92-87-5	ND	6400	ug/kg	08/19/94
Benzoic Acid	65-85-0	ND	6400	ug/kg	08/19/94
Benzo(a)anthracene	56-55-3	ND	1300	ug/kg	08/19/94
Benzo(b)fluoranthene	205-99-2	ND	1300	ug/kg	08/19/94
Benzo(k)fluoranthene	207-08-9	ND	1300	ug/kg	08/19/94
Benzo(g,h,i)perylene	191-24-2	ND	1300	ug/kg	08/19/94
Benzo(a)pyrene	50-32-8	ND	1300	ug/kg	08/19/94
Benzyl Alcohol	100-51-6	ND	2600	ug/kg	08/19/94
Bis(2-chloroethoxy)methane	111-91-1	ND	1300	ug/kg	08/19/94
Bis(2-choroethyl) Ether	111-44-4	ND	1300	ug/kg	08/19/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	1300	ug/kg	08/19/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	1300	ug/kg	08/19/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	1300	ug/kg	08/19/94

HARZA

SAMPLE ID: G-2/5'
AEN LAB NO: 9407303-04
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	1300	ug/kg	08/19/94
4-Chloroaniline	106-47-8	ND	2600	ug/kg	08/19/94
2-Chloronaphthalene	91-58-7	ND	1300	ug/kg	08/19/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	1300	ug/kg	08/19/94
Chrysene	218-01-9	ND	1300	ug/kg	08/19/94
Dibenzo(a,h)anthracene	53-70-3	ND	1300	ug/kg	08/19/94
Dibenzofuran	132-64-9	ND	1300	ug/kg	08/19/94
Di-n-butyl Phthalate	84-74-2	ND	1300	ug/kg	08/19/94
1,2-Dichlorobenzene	95-50-1	ND	1300	ug/kg	08/19/94
1,3-Dichlorobenzene	541-73-1	ND	1300	ug/kg	08/19/94
1,4-Dichlorobenzene	106-46-7	ND	1300	ug/kg	08/19/94
3,3'-Dichlorobenzidine	91-94-1	ND	2600	ug/kg	08/19/94
Diethyl Phthalate	84-66-2	ND	1300	ug/kg	08/19/94
Dimethyl Phthalate	131-11-3	ND	1300	ug/kg	08/19/94
2,4-Dinitrotoluene	121-14-2	ND	1300	ug/kg	08/19/94
2,6-Dinitrotoluene	606-20-2	ND	1300	ug/kg	08/19/94
Di-n-octyl Phthalate	117-84-0	ND	1300	ug/kg	08/19/94
1,2-Diphenylhydrazine	122-66-7	ND	1300	ug/kg	08/19/94
Fluoranthene	206-44-0	ND	1300	ug/kg	08/19/94
Fluorene	86-73-7	ND	1300	ug/kg	08/19/94
Hexachlorobenzene	118-74-1	ND	1300	ug/kg	08/19/94
Hexachlorobutadiene	87-68-3	ND	1300	ug/kg	08/19/94
Hexachlorocyclopentadiene	77-47-4	ND	1300	ug/kg	08/19/94
Hexachloroethane	67-72-1	ND	1300	ug/kg	08/19/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	1300	ug/kg	08/19/94
Isophorone	78-59-1	ND	1300	ug/kg	08/19/94
2-Methylnaphthalene	91-57-6	6,700 *	1300	ug/kg	08/19/94
Naphthalene	91-20-3	7,800 *	1300	ug/kg	08/19/94
2-Nitroaniline	88-74-4	ND	6400	ug/kg	08/19/94
3-Nitroaniline	99-09-2	ND	6400	ug/kg	08/19/94
4-Nitroaniline	100-01-6	ND	6400	ug/kg	08/19/94
Nitrobenzene	98-95-3	ND	1300	ug/kg	08/19/94
N-Nitrosodimethylamine	62-75-9	ND	1300	ug/kg	08/19/94
N-Nitrosodiphenylamine	86-30-6	ND	1300	ug/kg	08/19/94
N-Nitrosodi-n-propylamine	621-64-7	ND	1300	ug/kg	08/19/94
Phenanthrene	85-01-8	3,600 *	1300	ug/kg	08/19/94
Pyrene	129-00-0	1,400 *	1300	ug/kg	08/19/94
1,2,4-Trichlorobenzene	120-82-1	ND	1300	ug/kg	08/19/94
4-Chloro-3-methylphenol	59-50-7	ND	1300	ug/kg	08/19/94
2-Chlorophenol	95-57-8	ND	1300	ug/kg	08/19/94
2,4-Dichlorophenol	120-83-2	ND	1300	ug/kg	08/19/94
2,4-Dimethylphenol	105-67-9	ND	1300	ug/kg	08/19/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	6400	ug/kg	08/19/94

HARZA

SAMPLE ID: G-2/5'
AEN LAB NO: 9407303-04
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	6400	ug/kg	08/19/94
2-Methylphenol	95-48-7	ND	1300	ug/kg	08/19/94
4-Methylphenol	106-44-5	ND	1300	ug/kg	08/19/94
2-Nitrophenol	88-75-5	ND	1300	ug/kg	08/19/94
4-Nitrophenol	100-02-7	ND	6400	ug/kg	08/19/94
Pentachlorophenol	87-86-5	ND	6400	ug/kg	08/19/94
Phenol	108-95-2	ND	1300	ug/kg	08/19/94
2,4,5-Trichlorophenol	95-95-4	ND	1300	ug/kg	08/19/94
2,4,6-Trichlorophenol	88-06-2	ND	1300	ug/kg	08/19/94

See page 34 for comments pertaining to this sample.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-3/2'
AEN LAB NO: 9407303-05
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	3,400 *	1	mg/kg	08/24/94
TPH as Oil	GC-FID	130 *	5	mg/kg	08/24/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	3 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	15 *	1	mg/kg	08/04/94
Copper	EPA 6010	19 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	150 *	10	mg/kg	08/05/94
Nickel	EPA 6010	30 *	1	mg/kg	08/04/94
Silver	EPA 6010	ND	0.1	mg/kg	08/04/94
Zinc	EPA 6010	59 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	5000	ug/kg	08/07/94
Benzene	71-43-2	ND	300	ug/kg	08/07/94
Bromodichloromethane	75-27-4	ND	300	ug/kg	08/07/94
Bromoform	75-25-2	ND	300	ug/kg	08/07/94
Bromomethane	74-83-9	ND	500	ug/kg	08/07/94
2-Butanone	78-93-3	ND	5000	ug/kg	08/07/94
Carbon Disulfide	75-15-0	ND	500	ug/kg	08/07/94
Carbon Tetrachloride	56-23-5	ND	300	ug/kg	08/07/94
Chlorobenzene	108-90-7	ND	300	ug/kg	08/07/94
Chloroethane	75-00-3	ND	500	ug/kg	08/07/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	500	ug/kg	08/07/94
Chloroform	67-66-3	ND	300	ug/kg	08/07/94
Chloromethane	74-87-3	ND	500	ug/kg	08/07/94

HARZA

SAMPLE ID: G-3/2'
AEN LAB NO: 9407303-05
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	300	ug/kg	08/07/94
1,1-Dichloroethane	75-43-3	ND	300	ug/kg	08/07/94
1,2-Dichloroethane	107-06-2	ND	300	ug/kg	08/07/94
1,1-Dichloroethene	75-35-4	ND	300	ug/kg	08/07/94
cis-1,2-Dichloroethene	156-59-2	ND	300	ug/kg	08/07/94
trans-1,2-Dichloroethene	156-60-5	ND	300	ug/kg	08/07/94
1,2-Dichloropropane	78-87-5	ND	300	ug/kg	08/07/94
cis-1,3-Dichloropropene	10061-01-5	ND	300	ug/kg	08/07/94
trans-1,3-Dichloropropene	10061-02-6	ND	300	ug/kg	08/07/94
Ethylbenzene	100-41-4	ND	300	ug/kg	08/07/94
2-Hexanone	591-78-6	ND	3000	ug/kg	08/07/94
Methylene Chloride	75-09-2	ND	300	ug/kg	08/07/94
4-Methyl-2-pentanone	108-10-1	ND	3000	ug/kg	08/07/94
Styrene	100-42-5	ND	300	ug/kg	08/07/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	300	ug/kg	08/07/94
Tetrachloroethene	127-18-4	ND	300	ug/kg	08/07/94
Toluene	108-88-3	ND	300	ug/kg	08/07/94
1,1,1-Trichloroethane	71-55-6	ND	300	ug/kg	08/07/94
1,1,2-Trichloroethane	79-00-5	ND	300	ug/kg	08/07/94
Trichloroethene	79-01-6	ND	300	ug/kg	08/07/94
Vinyl Acetate	108-05-4	ND	3000	ug/kg	08/07/94
Vinyl Chloride	75-01-4	ND	500	ug/kg	08/07/94
Xylenes Total	1330-20-7	ND	500	ug/kg	08/07/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	08/03/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	33000	ug/kg	08/08/94
Acenaphthylene	208-96-8	ND	33000	ug/kg	08/08/94
Anthracene	120-12-7	ND	33000	ug/kg	08/08/94
Benzidine	92-87-5	ND	160000	ug/kg	08/08/94
Benzoic Acid	65-85-0	ND	160000	ug/kg	08/08/94
Benzo(a)anthracene	56-55-3	ND	33000	ug/kg	08/08/94
Benzo(b)fluoranthene	205-99-2	ND	33000	ug/kg	08/08/94
Benzo(k)fluoranthene	207-08-9	ND	33000	ug/kg	08/08/94
Benzo(g,h,i)perylene	191-24-2	ND	33000	ug/kg	08/08/94
Benzo(a)pyrene	50-32-8	ND	33000	ug/kg	08/08/94
Benzyl Alcohol	100-51-6	ND	66000	ug/kg	08/08/94
Bis(2-chloroethoxy)methane	111-91-1	ND	33000	ug/kg	08/08/94
Bis(2-choroethyl) Ether	111-44-4	ND	33000	ug/kg	08/08/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	33000	ug/kg	08/08/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	33000	ug/kg	08/08/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	33000	ug/kg	08/08/94

HARZA

SAMPLE ID: G-3/2'
AEN LAB NO: 9407303-05
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	33000	ug/kg	08/08/94
4-Chloroaniline	106-47-8	ND	66000	ug/kg	08/08/94
2-Chloronaphthalene	91-58-7	ND	33000	ug/kg	08/08/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	33000	ug/kg	08/08/94
Chrysene	218-01-9	ND	33000	ug/kg	08/08/94
Dibenzo(a,h)anthracene	53-70-3	ND	33000	ug/kg	08/08/94
Dibenzofuran	132-64-9	ND	33000	ug/kg	08/08/94
Di-n-butyl Phthalate	84-74-2	ND	33000	ug/kg	08/08/94
1,2-Dichlorobenzene	95-50-1	ND	33000	ug/kg	08/08/94
1,3-Dichlorobenzene	541-73-1	ND	33000	ug/kg	08/08/94
1,4-Dichlorobenzene	106-46-7	ND	33000	ug/kg	08/08/94
3,3'-Dichlorobenzidine	91-94-1	ND	66000	ug/kg	08/08/94
Diethyl Phthalate	84-66-2	ND	33000	ug/kg	08/08/94
Dimethyl Phthalate	131-11-3	ND	33000	ug/kg	08/08/94
2,4-Dinitrotoluene	121-14-2	ND	33000	ug/kg	08/08/94
2,6-Dinitrotoluene	606-20-2	ND	33000	ug/kg	08/08/94
Di-n-octyl Phthalate	117-84-0	ND	33000	ug/kg	08/08/94
1,2-Diphenylhydrazine	122-66-7	ND	33000	ug/kg	08/08/94
Fluoranthene	206-44-0	ND	33000	ug/kg	08/08/94
Fluorene	86-73-7	ND	33000	ug/kg	08/08/94
Hexachlorobenzene	118-74-1	ND	33000	ug/kg	08/08/94
Hexachlorobutadiene	87-68-3	ND	33000	ug/kg	08/08/94
Hexachlorocyclopentadiene	77-47-4	ND	33000	ug/kg	08/08/94
Hexachloroethane	67-72-1	ND	33000	ug/kg	08/08/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	33000	ug/kg	08/08/94
Isophorone	78-59-1	ND	33000	ug/kg	08/08/94
2-Methylnaphthalene	91-57-6	ND	33000	ug/kg	08/08/94
Naphthalene	91-20-3	ND	33000	ug/kg	08/08/94
2-Nitroaniline	88-74-4	ND	160000	ug/kg	08/08/94
3-Nitroaniline	99-09-2	ND	160000	ug/kg	08/08/94
4-Nitroaniline	100-01-6	ND	160000	ug/kg	08/08/94
Nitrobenzene	98-95-3	ND	33000	ug/kg	08/08/94
N-Nitrosodimethylamine	62-75-9	ND	33000	ug/kg	08/08/94
N-Nitrosodiphenylamine	86-30-6	ND	33000	ug/kg	08/08/94
N-Nitrosodi-n-propylamine	621-64-7	ND	33000	ug/kg	08/08/94
Phenanthrene	85-01-8	ND	33000	ug/kg	08/08/94
Pyrene	129-00-0	ND	33000	ug/kg	08/08/94
1,2,4-Trichlorobenzene	120-82-1	ND	33000	ug/kg	08/08/94
4-Chloro-3-methylphenol	59-50-7	ND	33000	ug/kg	08/08/94
2-Chlorophenol	95-57-8	ND	33000	ug/kg	08/08/94
2,4-Dichlorophenol	120-83-2	ND	33000	ug/kg	08/08/94
2,4-Dimethylphenol	105-67-9	ND	33000	ug/kg	08/08/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	160000	ug/kg	08/08/94

HARZA

SAMPLE ID: G-3/2'
AEN LAB NO: 9407303-05
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	160000	ug/kg	08/08/94
2-Methylphenol	95-48-7	ND	33000	ug/kg	08/08/94
4-Methylphenol	106-44-5	ND	33000	ug/kg	08/08/94
2-Nitrophenol	88-75-5	ND	33000	ug/kg	08/08/94
4-Nitrophenol	100-02-7	ND	160000	ug/kg	08/08/94
Pentachlorophenol	87-86-5	ND	160000	ug/kg	08/08/94
Phenol	108-95-2	ND	33000	ug/kg	08/08/94
2,4,5-Trichlorophenol	95-95-4	ND	33000	ug/kg	08/08/94
2,4,6-Trichlorophenol	88-06-2	ND	33000	ug/kg	08/08/94

See page 34 for comments pertaining to this sample.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-3/5'
AEN LAB NO: 9407303-06
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	3,100 *	1	mg/kg	08/24/94
TPH as Oil	GC-FID	430 *	5	mg/kg	08/24/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	4 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	17 *	1	mg/kg	08/04/94
Copper	EPA 6010	24 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	190 *	1	mg/kg	08/04/94
Nickel	EPA 6010	26 *	1	mg/kg	08/04/94
Silver	EPA 6010	ND	0.1	mg/kg	08/04/94
Zinc	EPA 6010	95 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	5000	ug/kg	08/08/94
Benzene	71-43-2	ND	300	ug/kg	08/08/94
Bromodichloromethane	75-27-4	ND	300	ug/kg	08/08/94
Bromoform	75-25-2	ND	300	ug/kg	08/08/94
Bromomethane	74-83-9	ND	500	ug/kg	08/08/94
2-Butanone	78-93-3	ND	5000	ug/kg	08/08/94
Carbon Disulfide	75-15-0	ND	500	ug/kg	08/08/94
Carbon Tetrachloride	56-23-5	ND	300	ug/kg	08/08/94
Chlorobenzene	108-90-7	ND	300	ug/kg	08/08/94
Chloroethane	75-00-3	ND	500	ug/kg	08/08/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	500	ug/kg	08/08/94
Chloroform	67-66-3	ND	300	ug/kg	08/08/94
Chloromethane	74-87-3	ND	500	ug/kg	08/08/94

HARZA

SAMPLE ID: G-3/5'
AEN LAB NO: 9407303-06
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	300	ug/kg	08/08/94
1,1-Dichloroethane	75-43-3	ND	300	ug/kg	08/08/94
1,2-Dichloroethane	107-06-2	ND	300	ug/kg	08/08/94
1,1-Dichloroethene	75-35-4	ND	300	ug/kg	08/08/94
cis-1,2-Dichloroethene	156-59-2	ND	300	ug/kg	08/08/94
trans-1,2-Dichloroethene	156-60-5	ND	300	ug/kg	08/08/94
1,2-Dichloropropane	78-87-5	ND	300	ug/kg	08/08/94
cis-1,3-Dichloropropene	10061-01-5	ND	300	ug/kg	08/08/94
trans-1,3-Dichloropropene	10061-02-6	ND	300	ug/kg	08/08/94
Ethylbenzene	100-41-4	1,600 *	300	ug/kg	08/08/94
2-Hexanone	591-78-6	ND	3000	ug/kg	08/08/94
Methylene Chloride	75-09-2	ND	300	ug/kg	08/08/94
4-Methyl-2-pentanone	108-10-1	ND	3000	ug/kg	08/08/94
Styrene	100-42-5	ND	300	ug/kg	08/08/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	300	ug/kg	08/08/94
Tetrachloroethene	127-18-4	ND	300	ug/kg	08/08/94
Toluene	108-88-3	ND	300	ug/kg	08/08/94
1,1,1-Trichloroethane	71-55-6	ND	300	ug/kg	08/08/94
1,1,2-Trichloroethane	79-00-5	ND	300	ug/kg	08/08/94
Trichloroethene	79-01-6	ND	300	ug/kg	08/08/94
Vinyl Acetate	108-05-4	ND	3000	ug/kg	08/08/94
Vinyl Chloride	75-01-4	ND	500	ug/kg	08/08/94
Xylenes Total	1330-20-7	800 *	500	ug/kg	08/08/94
#Extraction for BNAs	EPA 3550	-		Extrn Date	08/03/94
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	3300	ug/kg	08/19/94
Acenaphthylene	208-96-8	ND	3300	ug/kg	08/19/94
Anthracene	120-12-7	ND	3300	ug/kg	08/19/94
Benzidine	92-87-5	ND	16000	ug/kg	08/19/94
Benzoic Acid	65-85-0	ND	16000	ug/kg	08/19/94
Benzo(a)anthracene	56-55-3	ND	3300	ug/kg	08/19/94
Benzo(b)fluoranthene	205-99-2	ND	3300	ug/kg	08/19/94
Benzo(k)fluoranthene	207-08-9	ND	3300	ug/kg	08/19/94
Benzo(g,h,i)perylene	191-24-2	ND	3300	ug/kg	08/19/94
Benzo(a)pyrene	50-32-8	ND	3300	ug/kg	08/19/94
Benzyl Alcohol	100-51-6	ND	6600	ug/kg	08/19/94
Bis(2-chloroethoxy)methane	111-91-1	ND	3300	ug/kg	08/19/94
Bis(2-choroethyl) Ether	111-44-4	ND	3300	ug/kg	08/19/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	3300	ug/kg	08/19/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	3300	ug/kg	08/19/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	3300	ug/kg	08/19/94

HARZA

SAMPLE ID: G-3/5'
AEN LAB NO: 9407303-06
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	3300	ug/kg	08/19/94
4-Chloroaniline	106-47-8	ND	6600	ug/kg	08/19/94
2-Chloronaphthalene	91-58-7	ND	3300	ug/kg	08/19/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	3300	ug/kg	08/19/94
Chrysene	218-01-9	ND	3300	ug/kg	08/19/94
Dibenzo(a,h)anthracene	53-70-3	ND	3300	ug/kg	08/19/94
Dibenzofuran	132-64-9	ND	3300	ug/kg	08/19/94
Di-n-butyl Phthalate	84-74-2	ND	3300	ug/kg	08/19/94
1,2-Dichlorobenzene	95-50-1	ND	3300	ug/kg	08/19/94
1,3-Dichlorobenzene	541-73-1	ND	3300	ug/kg	08/19/94
1,4-Dichlorobenzene	106-46-7	ND	3300	ug/kg	08/19/94
3,3'-Dichlorobenzidine	91-94-1	ND	6600	ug/kg	08/19/94
Diethyl Phthalate	84-66-2	ND	3300	ug/kg	08/19/94
Dimethyl Phthalate	131-11-3	ND	3300	ug/kg	08/19/94
2,4-Dinitrotoluene	121-14-2	ND	3300	ug/kg	08/19/94
2,6-Dinitrotoluene	606-20-2	ND	3300	ug/kg	08/19/94
Di-n-octyl Phthalate	117-84-0	ND	3300	ug/kg	08/19/94
1,2-Diphenylhydrazine	122-66-7	ND	3300	ug/kg	08/19/94
Fluoranthene	206-44-0	ND	3300	ug/kg	08/19/94
Fluorene	86-73-7	ND	3300	ug/kg	08/19/94
Hexachlorobenzene	118-74-1	ND	3300	ug/kg	08/19/94
Hexachlorobutadiene	87-68-3	ND	3300	ug/kg	08/19/94
Hexachlorocyclopentadiene	77-47-4	ND	3300	ug/kg	08/19/94
Hexachloroethane	67-72-1	ND	3300	ug/kg	08/19/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	3300	ug/kg	08/19/94
Isophorone	78-59-1	ND	3300	ug/kg	08/19/94
2-Methylnaphthalene	91-57-6	3,600 *	3300	ug/kg	08/19/94
Naphthalene	91-20-3	16,000 *	3300	ug/kg	08/19/94
2-Nitroaniline	88-74-4	ND	16000	ug/kg	08/19/94
3-Nitroaniline	99-09-2	ND	16000	ug/kg	08/19/94
4-Nitroaniline	100-01-6	ND	16000	ug/kg	08/19/94
Nitrobenzene	98-95-3	ND	3300	ug/kg	08/19/94
N-Nitrosodimethylamine	62-75-9	ND	3300	ug/kg	08/19/94
N-Nitrosodiphenylamine	86-30-6	ND	3300	ug/kg	08/19/94
N-Nitrosodi-n-propylamine	621-64-7	ND	3300	ug/kg	08/19/94
Phenanthrene	85-01-8	ND	3300	ug/kg	08/19/94
Pyrene	129-00-0	ND	3300	ug/kg	08/19/94
1,2,4-Trichlorobenzene	120-82-1	ND	3300	ug/kg	08/19/94
4-Chloro-3-methylphenol	59-50-7	ND	3300	ug/kg	08/19/94
2-Chlorophenol	95-57-8	ND	3300	ug/kg	08/19/94
2,4-Dichlorophenol	120-83-2	ND	3300	ug/kg	08/19/94
2,4-Dimethylphenol	105-67-9	ND	3300	ug/kg	08/19/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	16000	ug/kg	08/19/94

HARZA

SAMPLE ID: G-3/5'
AEN LAB NO: 9407303-06
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	16000	ug/kg	08/19/94
2-Methylphenol	95-48-7	ND	3300	ug/kg	08/19/94
4-Methylphenol	106-44-5	ND	3300	ug/kg	08/19/94
2-Nitrophenol	88-75-5	ND	3300	ug/kg	08/19/94
4-Nitrophenol	100-02-7	ND	16000	ug/kg	08/19/94
Pentachlorophenol	87-86-5	ND	16000	ug/kg	08/19/94
Phenol	108-95-2	ND	3300	ug/kg	08/19/94
2,4,5-Trichlorophenol	95-95-4	ND	3300	ug/kg	08/19/94
2,4,6-Trichlorophenol	88-06-2	ND	3300	ug/kg	08/19/94

Reporting limits elevated for 8240 and 8270 analytes due to high levels of target compounds.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-4/2'
AEN LAB NO: 9407303-07
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	2 *	1	mg/kg	08/23/94
TPH as Oil	GC-FID	20 *	5	mg/kg	08/23/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	ND	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	190 *	1	mg/kg	08/04/94
Copper	EPA 6010	55 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	5 *	1	mg/kg	08/04/94
Nickel	EPA 6010	300 *	1	mg/kg	08/04/94
Silver	EPA 6010	0.1 *	0.1	mg/kg	08/04/94
Zinc	EPA 6010	59 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	08/06/94
Benzene	71-43-2	ND	5	ug/kg	08/06/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	08/06/94
Bromoform	75-25-2	ND	5	ug/kg	08/06/94
Bromomethane	74-83-9	ND	10	ug/kg	08/06/94
2-Butanone	78-93-3	ND	100	ug/kg	08/06/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	08/06/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	08/06/94
Chlorobenzene	108-90-7	ND	5	ug/kg	08/06/94
Chloroethane	75-00-3	ND	10	ug/kg	08/06/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	08/06/94
Chloroform	67-66-3	ND	5	ug/kg	08/06/94
Chloromethane	74-87-3	ND	10	ug/kg	08/06/94

HARZA

SAMPLE ID: G-4/2'
AEN LAB NO: 9407303-07
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	5	ug/kg	08/06/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	08/06/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	08/06/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	08/06/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	08/06/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	08/06/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	08/06/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	08/06/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	08/06/94
Ethylbenzene	100-41-4	29 *	5	ug/kg	08/06/94
2-Hexanone	591-78-6	ND	50	ug/kg	08/06/94
Methylene Chloride	75-09-2	ND	20	ug/kg	08/06/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	08/06/94
Styrene	100-42-5	ND	5	ug/kg	08/06/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	08/06/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	08/06/94
Toluene	108-88-3	ND	5	ug/kg	08/06/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	08/06/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	08/06/94
Trichloroethene	79-01-6	ND	5	ug/kg	08/06/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	08/06/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	08/06/94
Xylenes Total	1330-20-7	ND	10	ug/kg	08/06/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	08/03/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	3300	ug/kg	08/19/94
Acenaphthylene	208-96-8	ND	3300	ug/kg	08/19/94
Anthracene	120-12-7	ND	3300	ug/kg	08/19/94
Benzidine	92-87-5	ND	16000	ug/kg	08/19/94
Benzoic Acid	65-85-0	ND	16000	ug/kg	08/19/94
Benzo(a)anthracene	56-55-3	ND	3300	ug/kg	08/19/94
Benzo(b)fluoranthene	205-99-2	ND	3300	ug/kg	08/19/94
Benzo(k)fluoranthene	207-08-9	ND	3300	ug/kg	08/19/94
Benzo(g,h,i)perylene	191-24-2	ND	3300	ug/kg	08/19/94
Benzo(a)pyrene	50-32-8	ND	3300	ug/kg	08/19/94
Benzyl Alcohol	100-51-6	ND	6600	ug/kg	08/19/94
Bis(2-chloroethoxy)methane	111-91-1	ND	3300	ug/kg	08/19/94
Bis(2-choroethyl) Ether	111-44-4	ND	3300	ug/kg	08/19/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	3300	ug/kg	08/19/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	3300	ug/kg	08/19/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	3300	ug/kg	08/19/94

HARZA

SAMPLE ID: G-4/2'
AEN LAB NO: 9407303-07
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	3300	ug/kg	08/19/94
4-Chloroaniline	106-47-8	ND	6600	ug/kg	08/19/94
2-Chloronaphthalene	91-58-7	ND	3300	ug/kg	08/19/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	3300	ug/kg	08/19/94
Chrysene	218-01-9	ND	3300	ug/kg	08/19/94
Dibenzo(a,h)anthracene	53-70-3	ND	3300	ug/kg	08/19/94
Dibenzofuran	132-64-9	ND	3300	ug/kg	08/19/94
Di-n-butyl Phthalate	84-74-2	ND	3300	ug/kg	08/19/94
1,2-Dichlorobenzene	95-50-1	ND	3300	ug/kg	08/19/94
1,3-Dichlorobenzene	541-73-1	ND	3300	ug/kg	08/19/94
1,4-Dichlorobenzene	106-46-7	ND	3300	ug/kg	08/19/94
3,3'-Dichlorobenzidine	91-94-1	ND	6600	ug/kg	08/19/94
Diethyl Phthalate	84-66-2	ND	3300	ug/kg	08/19/94
Dimethyl Phthalate	131-11-3	ND	3300	ug/kg	08/19/94
2,4-Dinitrotoluene	121-14-2	ND	3300	ug/kg	08/19/94
2,6-Dinitrotoluene	606-20-2	ND	3300	ug/kg	08/19/94
Di-n-octyl Phthalate	117-84-0	ND	3300	ug/kg	08/19/94
1,2-Diphenylhydrazine	122-66-7	ND	3300	ug/kg	08/19/94
Fluoranthene	206-44-0	ND	3300	ug/kg	08/19/94
Fluorene	86-73-7	ND	3300	ug/kg	08/19/94
Hexachlorobenzene	118-74-1	ND	3300	ug/kg	08/19/94
Hexachlorobutadiene	87-68-3	ND	3300	ug/kg	08/19/94
Hexachlorocyclopentadiene	77-47-4	ND	3300	ug/kg	08/19/94
Hexachloroethane	67-72-1	ND	3300	ug/kg	08/19/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	3300	ug/kg	08/19/94
Isophorone	78-59-1	ND	3300	ug/kg	08/19/94
2-Methylnaphthalene	91-57-6	ND	3300	ug/kg	08/19/94
Naphthalene	91-20-3	ND	3300	ug/kg	08/19/94
2-Nitroaniline	88-74-4	ND	16000	ug/kg	08/19/94
3-Nitroaniline	99-09-2	ND	16000	ug/kg	08/19/94
4-Nitroaniline	100-01-6	ND	16000	ug/kg	08/19/94
Nitrobenzene	98-95-3	ND	3300	ug/kg	08/19/94
N-Nitrosodimethylamine	62-75-9	ND	3300	ug/kg	08/19/94
N-Nitrosodiphenylamine	86-30-6	ND	3300	ug/kg	08/19/94
N-Nitrosodi-n-propylamine	621-64-7	ND	3300	ug/kg	08/19/94
Phenanthrene	85-01-8	ND	3300	ug/kg	08/19/94
Pyrene	129-00-0	ND	3300	ug/kg	08/19/94
1,2,4-Trichlorobenzene	120-82-1	ND	3300	ug/kg	08/19/94
4-Chloro-3-methylphenol	59-50-7	ND	3300	ug/kg	08/19/94
2-Chlorophenol	95-57-8	ND	3300	ug/kg	08/19/94
2,4-Dichlorophenol	120-83-2	ND	3300	ug/kg	08/19/94
2,4-Dimethylphenol	105-67-9	ND	3300	ug/kg	08/19/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	16000	ug/kg	08/19/94

HARZA

SAMPLE ID: G-4/2'
AEN LAB NO: 9407303-07
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	16000	ug/kg	08/19/94
2-Methylphenol	95-48-7	ND	3300	ug/kg	08/19/94
4-Methylphenol	106-44-5	ND	3300	ug/kg	08/19/94
2-Nitrophenol	88-75-5	ND	3300	ug/kg	08/19/94
4-Nitrophenol	100-02-7	ND	16000	ug/kg	08/19/94
Pentachlorophenol	87-86-5	ND	16000	ug/kg	08/19/94
Phenol	108-95-2	ND	3300	ug/kg	08/19/94
2,4,5-Trichlorophenol	95-95-4	ND	3300	ug/kg	08/19/94
2,4,6-Trichlorophenol	88-06-2	ND	3300	ug/kg	08/19/94

RLs elevated for 8270 analytes due to matrix interference. RL elevated for Methylene Chloride due to background contamination.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: G-4/5'
AEN LAB NO: 9407303-08
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3550	-		Extrn Date	08/22/94
TPH as Diesel	GC-FID	2 *	1	mg/kg	08/23/94
TPH as Oil	GC-FID	ND	5	mg/kg	08/23/94
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	08/02/94
Arsenic	EPA 7060	5 *	1	mg/kg	08/03/94
Selenium	EPA 7740	ND	2	mg/kg	08/03/94
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	08/02/94
Cadmium	EPA 6010	ND	0.1	mg/kg	08/04/94
Chromium	EPA 6010	190 *	1	mg/kg	08/04/94
Copper	EPA 6010	54 *	0.5	mg/kg	08/04/94
Lead	EPA 6010	8 *	1	mg/kg	08/04/94
Nickel	EPA 6010	280 *	1	mg/kg	08/04/94
Silver	EPA 6010	0.2 *	0.1	mg/kg	08/04/94
Zinc	EPA 6010	69 *	1	mg/kg	08/04/94
VOCs in Soil by 8240	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	08/06/94
Benzene	71-43-2	ND	5	ug/kg	08/06/94
Bromodichloromethane	75-27-4	ND	5	ug/kg	08/06/94
Bromoform	75-25-2	ND	5	ug/kg	08/06/94
Bromomethane	74-83-9	ND	10	ug/kg	08/06/94
2-Butanone	78-93-3	ND	100	ug/kg	08/06/94
Carbon Disulfide	75-15-0	ND	10	ug/kg	08/06/94
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	08/06/94
Chlorobenzene	108-90-7	ND	5	ug/kg	08/06/94
Chloroethane	75-00-3	ND	10	ug/kg	08/06/94
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	08/06/94
Chloroform	67-66-3	ND	5	ug/kg	08/06/94
Chloromethane	74-87-3	ND	10	ug/kg	08/06/94

HARZA

SAMPLE ID: G-4/5'
AEN LAB NO: 9407303-08
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Dibromochloromethane	124-48-1	ND	5	ug/kg	08/06/94
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	08/06/94
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	08/06/94
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	08/06/94
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	08/06/94
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	08/06/94
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	08/06/94
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	08/06/94
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	08/06/94
Ethylbenzene	100-41-4	ND	5	ug/kg	08/06/94
2-Hexanone	591-78-6	ND	50	ug/kg	08/06/94
Methylene Chloride	75-09-2	ND	30	ug/kg	08/06/94
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	08/06/94
Styrene	100-42-5	ND	5	ug/kg	08/06/94
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	08/06/94
Tetrachloroethene	127-18-4	ND	5	ug/kg	08/06/94
Toluene	108-88-3	ND	5	ug/kg	08/06/94
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	08/06/94
1,1,2-Trichloroethane	79-00-5	ND	5	ug/kg	08/06/94
Trichloroethene	79-01-6	ND	5	ug/kg	08/06/94
Vinyl Acetate	108-05-4	ND	50	ug/kg	08/06/94
Vinyl Chloride	75-01-4	ND	10	ug/kg	08/06/94
Xylenes Total	1330-20-7	13 *	10	ug/kg	08/06/94
#Extraction for BNAs	**EPA 3550**	-		Extrn Date	08/03/94
Semi-Volatile Organics	**EPA 8270**				
Acenaphthene	83-32-9	ND	3300	ug/kg	08/05/94
Acenaphthylene	208-96-8	ND	3300	ug/kg	08/05/94
Anthracene	120-12-7	ND	3300	ug/kg	08/05/94
Benzidine	92-87-5	ND	16000	ug/kg	08/05/94
Benzoic Acid	65-85-0	ND	16000	ug/kg	08/05/94
Benzo(a)anthracene	56-55-3	ND	3300	ug/kg	08/05/94
Benzo(b)fluoranthene	205-99-2	ND	3300	ug/kg	08/05/94
Benzo(k)fluoranthene	207-08-9	ND	3300	ug/kg	08/05/94
Benzo(g,h,i)perylene	191-24-2	ND	3300	ug/kg	08/05/94
Benzo(a)pyrene	50-32-8	ND	3300	ug/kg	08/05/94
Benzyl Alcohol	100-51-6	ND	6600	ug/kg	08/05/94
Bis(2-chloroethoxy)methane	111-91-1	ND	3300	ug/kg	08/05/94
Bis(2-choroethyl) Ether	111-44-4	ND	3300	ug/kg	08/05/94
Bis(2-chloroisopropyl) Ether	108-60-1	ND	3300	ug/kg	08/05/94
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	3300	ug/kg	08/05/94
4-Bromophenyl Phenyl Ether	101-55-3	ND	3300	ug/kg	08/05/94

HARZA

SAMPLE ID: G-4/5'
AEN LAB NO: 9407303-08
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Butylbenzyl Phthalate	85-68-7	ND	3300	ug/kg	08/05/94
4-Chloroaniline	106-47-8	ND	6600	ug/kg	08/05/94
2-Chloronaphthalene	91-58-7	ND	3300	ug/kg	08/05/94
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	3300	ug/kg	08/05/94
Chrysene	218-01-9	ND	3300	ug/kg	08/05/94
Dibenzo(a,h)anthracene	53-70-3	ND	3300	ug/kg	08/05/94
Dibenzofuran	132-64-9	ND	3300	ug/kg	08/05/94
Di-n-butyl Phthalate	84-74-2	ND	3300	ug/kg	08/05/94
1,2-Dichlorobenzene	95-50-1	ND	3300	ug/kg	08/05/94
1,3-Dichlorobenzene	541-73-1	ND	3300	ug/kg	08/05/94
1,4-Dichlorobenzene	106-46-7	ND	3300	ug/kg	08/05/94
3,3'-Dichlorobenzidine	91-94-1	ND	6600	ug/kg	08/05/94
Diethyl Phthalate	84-66-2	ND	3300	ug/kg	08/05/94
Dimethyl Phthalate	131-11-3	ND	3300	ug/kg	08/05/94
2,4-Dinitrotoluene	121-14-2	ND	3300	ug/kg	08/05/94
2,6-Dinitrotoluene	606-20-2	ND	3300	ug/kg	08/05/94
Di-n-octyl Phthalate	117-84-0	ND	3300	ug/kg	08/05/94
1,2-Diphenylhydrazine	122-66-7	ND	3300	ug/kg	08/05/94
Fluoranthene	206-44-0	ND	3300	ug/kg	08/05/94
Fluorene	86-73-7	ND	3300	ug/kg	08/05/94
Hexachlorobenzene	118-74-1	ND	3300	ug/kg	08/05/94
Hexachlorobutadiene	87-68-3	ND	3300	ug/kg	08/05/94
Hexachlorocyclopentadiene	77-47-4	ND	3300	ug/kg	08/05/94
Hexachloroethane	67-72-1	ND	3300	ug/kg	08/05/94
Indeno(1,2,3-cd)pyrene	193-39-5	ND	3300	ug/kg	08/05/94
Isophorone	78-59-1	ND	3300	ug/kg	08/05/94
2-Methylnaphthalene	91-57-6	ND	3300	ug/kg	08/05/94
Naphthalene	91-20-3	ND	3300	ug/kg	08/05/94
2-Nitroaniline	88-74-4	ND	16000	ug/kg	08/05/94
3-Nitroaniline	99-09-2	ND	16000	ug/kg	08/05/94
4-Nitroaniline	100-01-6	ND	16000	ug/kg	08/05/94
Nitrobenzene	98-95-3	ND	3300	ug/kg	08/05/94
N-Nitrosodimethylamine	62-75-9	ND	3300	ug/kg	08/05/94
N-Nitrosodiphenylamine	86-30-6	ND	3300	ug/kg	08/05/94
N-Nitrosodi-n-propylamine	621-64-7	ND	3300	ug/kg	08/05/94
Phenanthrene	85-01-8	ND	3300	ug/kg	08/05/94
Pyrene	129-00-0	ND	3300	ug/kg	08/05/94
1,2,4-Trichlorobenzene	120-82-1	ND	3300	ug/kg	08/05/94
4-Chloro-3-methylphenol	59-50-7	ND	3300	ug/kg	08/05/94
2-Chlorophenol	95-57-8	ND	3300	ug/kg	08/05/94
2,4-Dichlorophenol	120-83-2	ND	3300	ug/kg	08/05/94
2,4-Dimethylphenol	105-67-9	ND	3300	ug/kg	08/05/94
4,6-Dinitro-2-methylphenol	534-52-1	ND	16000	ug/kg	08/05/94

HARZA

SAMPLE ID: G-4/5'
AEN LAB NO: 9407303-08
AEN WORK ORDER: 9407303
CLIENT PROJ. ID: K615-M

DATE SAMPLED: 07/26/94
DATE RECEIVED: 07/27/94
REPORT DATE: 08/29/94

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
2,4-Dinitrophenol	51-28-5	ND	16000	ug/kg	08/05/94
2-Methylphenol	95-48-7	ND	3300	ug/kg	08/05/94
4-Methylphenol	106-44-5	ND	3300	ug/kg	08/05/94
2-Nitrophenol	88-75-5	ND	3300	ug/kg	08/05/94
4-Nitrophenol	100-02-7	ND	16000	ug/kg	08/05/94
Pentachlorophenol	87-86-5	ND	16000	ug/kg	08/05/94
Phenol	108-95-2	ND	3300	ug/kg	08/05/94
2,4,5-Trichlorophenol	95-95-4	ND	3300	ug/kg	08/05/94
2,4,6-Trichlorophenol	88-06-2	ND	3300	ug/kg	08/05/94

RLs elevated for 8270 analytes due to matrix interference. RL elevated for Methylene Chloride due to background contamination.

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9407303

CLIENT PROJECT ID: K615-M

Quality Control and Project Summary

Sample G-2/5' (9407303-04): Reporting limits elevated for 8240 and 8270 analytes due to high levels of target compounds. Reporting limits elevated for Cadmium, Nickel, Lead and Zinc due to matrix interference.

Sample G-3/2' (9407303-05): Reporting limits elevated for 8240 and 8270 analytes due to high levels of non-target compounds. Reporting limit elevated for Lead due to matrix interference.

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration that can reliably be determined during routine laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix and method dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

AEN JOB NO: 9407303
DATE EXTRACTED: 08/22/94
INSTRUMENT: C
MATRIX: SOIL

Surrogate Standard Recovery Summary
Method: EPA 3550 GCFID

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
08/23/94	G-1/2'	01	98
08/23/94	G-1/5'	02	102
08/24/94	G-2/2'	03	108
08/23/94	G-2/5'	04	I
08/23/94	G-3/2'	05	87
08/23/94	G-3/5'	06	I
08/23/94	G-4/2'	07	94
08/23/94	G-4/5'	08	93

I: Matrix Interference

Current QC Limits

Surrogate	Percent Recovery
n-Pentacosane	45-120

QUALITY CONTROL DATA

AEN JOB NO: 9407303
DATE EXTRACTED: 08/22/94
DATE ANALYZED: 08/25/94
SAMPLE SPIKED: 9407303-02
INSTRUMENT: C

Matrix Spike Recovery Summary
Method: EPA 3550 GCFID

Analyte	Spike Added (mg/kg)	Average Percent Recovery	RPD
Diesel	40.1	79	<1

Current QC Limits

Analyte	Percent Recovery	RPD
Diesel	44-108	13

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

AEN JOB NO: 9407303
INSTRUMENT: 12
MATRIX: SOIL

Surrogate Standard Recovery Summary
Method: EPA 8240

Date Analyzed	Client Id.	Lab Id.	Percent Recovery 1,2-Dichloroethane-d_4	Toluene-d_8	p-Bromofluorobenzene
08/05/94	G-1/2'	01	123	114	95
08/06/94	G-1/5'	02	122	111	86
08/05/94	G-2/2'	03	141	109	90
08/08/94	G-2/5'	04	88	102	106
08/07/94	G-3/2'	05	99	106	105
08/08/94	G-3/5'	06	96	118	107
08/06/94	G-4/2'	07	131	119	89
08/06/94	G-4/5'	08	121	114	89

Current QC Limits

Surrogate	Percent Recovery
1,2-Dichloroethane-d_4	68-141
Toluene-d_8	89-119
p-Bromofluorobenzene	85-112

QUALITY CONTROL DATA

AEN JOB NO: 9407303
DATE ANALYZED: 08/01/94
SAMPLE SPIKED: 9407286-02
INSTRUMENT: 12
MATRIX: SOIL

Matrix Spike Recovery Summary
Method: EPA 8240

Analyte	Spike Added (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	50.0	133	7
Trichloroethene	50.0	111	<1
Benzene	50.0	114	<1
Toluene	50.0	106	6
Chlorobenzene	50.0	102	1

Current QC Limits

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	66-143	15
Trichloroethene	60-127	12
Benzene	88-117	10
Toluene	70-126	14
Chlorobenzene	89-111	13

QUALITY CONTROL DATA

AEN JOB NO: 9407303
DATE EXTRACTED: 08/03/94
INSTRUMENT: 11
MATRIX: SOIL

Surrogate Standard Recovery Summary
Method: EPA 8270

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Nitrobenzene-d_5	2-Fluorobiphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluorophenol	2,4,6-Tribromophenol
08/05/94	G-1/2'	01	36	41	74	47	39	70
08/19/94	G-1/5'	02	47	91	76	55	47	74
08/19/94	G-2/2'	03	D	D	D	D	D	D
08/19/94	G-2/5'	04	50	101	105	57	73	86
08/08/94	G-3/2'	05	D	D	D	D	D	D
08/19/94	G-3/5'	06	D	D	D	D	D	D
08/19/94	G-4/2'	07	D	D	D	D	D	D
08/19/94	G-4/5'	08	D	D	D	D	D	D

D: Surrogates diluted out

Current QC Limits

Surrogate	Percent Recovery
Nitrobenzene-d_5	23-120
2-Fluorobiphenyl	30-115
Terphenyl-d_{14}	18-137
Phenol-d_5	24-113
2-Fluorophenol	25-121
2,4,6-Tribromophenol	19-122

QUALITY CONTROL DATA

AEN JOB NO: 9407303
DATE EXTRACTED: 08/03/94
DATE ANALYZED: 08/10/94
INSTRUMENT: 11
SAMPLE SPIKED: 9407303-07
MATRIX: SOIL

Matrix Spike Recovery Summary
Method: EPA 8270

Analyte	Spike Added (ug/kg)	Average Percent Recovery	RPD
Phenol	3330	57	21
2-Chlorophenol	3330	58	6
1,4-Dichlorobenzene	3400	48	7
N-Nitroso-di-n-propylamine	3320	43	19
1,2,4-Trichlorobenzene	3330	53	18
4-Chloro-3-methylphenol	3270	73	26
Acenaphthene	3330	60	10
4-Nitrophenol	3300	89	<1
2,4-Dinitrotoluene	3330	84	1
Pentachlorophenol	3380	91	7
Pyrene	3320	58	3

Current QC Limits

Analyte	Percent Recovery	RPD
Phenol	35- 81	33
2-Chlorophenol	28- 88	26
1,4-Dichlorobenzene	28- 81	9
N-Nitroso-di-n-propylamine	27- 83	20
1,2,4-Trichlorobenzene	30- 82	22
4-Chloro-3-methylphenol	31-104	28
Acenaphthene	30-101	17
4-Nitrophenol	7-102	32
2,4-Dinitrotoluene	26- 86	24
Pentachlorophenol	11- 94	41
Pyrene	23-128	23

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

AEN JOB NO: 9407303
SAMPLE SPIKED: SAND
DATE(S) ANALYZED: 08/03-04/94
MATRIX: SOIL

Method Spike Recovery Summary

Analyte	Inst./ Method	Spike Added (mg/kg)	Average Percent Recovery	RPD	QC Control Limits % Rec. Limit	QC Control Limits RPD Limit
Ag, Silver	ICP/6010	10	61	4	38- 78	7
As, Arsenic	4000/7060	20	98	2	76-128	15
Cd, Cadmium	ICP/6010	10	101	3	79-102	7
Cr, Chromium	ICP/6010	50	102	5	85-107	7
Cu, Copper	ICP/6010	50	101	3	89-107	6
Ni, Nickel	ICP/6010	50	104	4	85-107	6
Pb, Lead	ICP/6010	50	102	3	84-111	7
Se, Selenium	4000/7740	40	96	3	70-125	14
Zn, Zinc	ICP/6010	50	96	2	82-107	8

Daily method blanks for all associated runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-5, 5-L

Page 1 of 1

Lab Job 1407303

CHAIN-OF-CUSTODY RECORD

Project Number: K615-M

Project Name: Fuller-O'Brien Dive Diligence

Location: Smith S.F., CA

Sampler's Name (printed): TACIA MILLER

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals - Total	Total Organic Carbon			Remarks
G-1/2'	01A	7/26/94	X		2x6" Brass		X	X	X				X	X			07/27/94 Per S. Henshaw, total
G-1/5'	02A				Liner		X	X	X				X	X			metals = Ag, As, Cd, Cu, Cr, Ni, Pb,
G-2/2'	03A						✓	X	X				X	X			Se, Zn. KFS
G-2/5'	04A						✓	X	X				X	X			
G-3/2'	05A						✓	X	X				X	X			
G-3/5'	06A						✓	X	X				X	X			
G-4/2'	07A						X	X	X				X	X			8-10-94 Per Tacia Miller
G-4/5'	08A	↓	↓		↓		X	X	X				X	X			analyze 4 samples for
																	TPH Extractables RB STAT
																	8-12-94 Per Tacia Miller,
																	analyze remaining 4 samples
																	for TPH Extractables on
																	Standard TAT RB

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tacia C. Miller	7/26/94 10:30	Michael E. McMullen
Michael E. McMullen	7/27/94 11:25	
	7/27/94 11:25	Received for Laboratory by: (Signature) Jeri L. Pruitt

Ship To:

Attention:

Phone No:

Requested Turnaround Time: Standard

~~Kaldveer~~ Harza Assoc. Contact: T. Miller

Remarks:

Please address correspondence and return cooler # _____ to:

~~Kaldveer Associates, Inc.~~ HARZA
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates Geoscience Consultants A California Corporation

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

American Environmental Net.
3440 Vincent Road
Pleasant Hill, CA 94523

Attention: Denise Harrington

Client Proj. ID: 9407303

Lab Proj. ID: 9407F45

Sampled: 07/26/94
Received: 07/28/94
Analyzed: see below

Reported: 08/12/94

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9407F45-01 Sample Desc : **SOLID,G-1/2'**				
Organic Carbon : Total	**mg/kg**	**08/09/94**	**50**	**1300**
Lab No: 9407F45-02 Sample Desc : **SOLID,G-1/5'**				
Organic Carbon : Total	**mg/kg**	**08/09/94**	**50**	**980**
Lab No: 9407F45-03 Sample Desc : **SOLID,G-2/2'**				
Organic Carbon : Total	**mg/kg**	**08/09/94**	**50**	**2500**
Lab No: 9407F45-04 Sample Desc : **SOLID,G-2/5'**				
Organic Carbon : Total	**mg/kg**	**08/11/94**	**50**	**11000**
Lab No: 9407F45-05 Sample Desc : **SOLID,G-3/2'**				
Organic Carbon : Total	**mg/kg**	**08/11/94**	**50**	**5900**
Lab No: 9407F45-06 Sample Desc : **SOLID,G-3/5'**				
Organic Carbon : Total	**mg/kg**	**08/11/94**	**50**	**2200**
Lab No: 9407F45-07 Sample Desc : **SOLID,G-4/2'**				
Organic Carbon : Total	**mg/kg**	**08/11/94**	**50**	**2200**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mark Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

American Environmental Net.
3440 Vincent Road
Pleasant Hill, CA 94523

Attention: Denise Harrington

Client Proj. ID: 9407303

Lab Proj. ID: 9407F45

Sampled: 07/26/94
Received: 07/28/94
Analyzed: see below

Reported: 08/12/94

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9407F45-08				
Sample Desc : **SOLID,G-4/5'**				
Organic Carbon : Total	**mg/kg**	**08/11/94**	**50**	**5000**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mark Cargasacchi
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

AEN
3440 Vincent Road
Pleasant Hill, CA 94523
Attention: Denise Harrington

Client Project ID: 9407303
Matrix: Solid
QC Sample Group: 9407F45 01-08

Reported: Aug 15, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Total Organic Carbon	Total Organic Carbon
Method:	EPA 415.1	EPA 415.1
Analyst:	K. Hynes	K. Hynes
MS/MSD Batch#:	9407F452	9407F456
Date Prepared:	8/9/94	8/11/94
Date Analyzed:	8/9/94	8/11/94
Instrument I.D.#:	TOC	TOC
Conc. Spiked:	5000 mg/kg	10000 mg/kg
Matrix Spike % Recovery:	106	98
Matrix Spike Duplicate % Recovery:	98	98
Relative % Difference:	7.8	0.0

LCS Batch#:		
Date Prepared:		
Date Analyzed:		
Instrument I.D.#:		
LCS % Recovery:		
% Recovery Control Limits:	80-120	60-140

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Mark J. Cargasacchi
Project Manager

Reporting Info on:

1. Client: AEN
Address:
Contact: Denise Harrington
Alt. Contact:

American Environmental Network
3440 Vincent Road, Pleasant Hill, CA 94523
Phone (510) 930-9090
FAX (510) 930-0256

AEN

Page _ of 1

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number:
Lab Destination: SQ
Date Samples Shipped: 7-28-94
Lab Contact: Mark Cargassachi
Date Results Required: Standard
Date Report Required: Standard
Client Phone No.:
Client FAX No.:

Address Report To:
2. (1)

Send Invoice To:
3. (1)

Send Report To: (1) or 2 (Circle one)

Client P.O. No.: _____ Client Project I.D. No.: 9407303

Sample Team Member (s) _____

Lab Number	Client Sample Indentification	Air Volume	Date/ Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	ANALYSIS: TOC	Comments / Hazards
	G-1/2'		7-26-94	B		1	JAR	X	
	G-1/5'							X	
	G-2/2'							X	
	G-2/5'							X	
	G-3/2'							X	
	G-3/5'							X	
	G-4/2'							X	
	G-4/5'							X	

104

Relinquished by: (Signature) Ann Gillespie	DATE 7-28-94	TIME 1005	Received by: (Signature) Steve Ten
Relinquished by: (Signature) Steve Ten	DATE 7/28/94	TIME 1.05	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature) Lisa
Method of Shipment			Lab Comments

DATE 7/28/94 TIME 10:05
DATE 072894 TIME 1305

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
4) PVC filter, diam. ____ pore size ____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
10) Other _____ 11) Other _____

COPIES: WHITE - JOB FILE YELLOW - PROJECT FILE PINK - CLIENT