TRANSMITTAL

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CROWS LANDING
SSIC NO. 5090.3.A

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To: Darren Newton **Date:** June 15, 2004

From: David Kelly DSK

Subject: Interim Data Summary
UST Cluster 1 Soil Sampling and Analysis Results

Performance evaluation testing was conducted from 23 January 2001 through 15 December 2003 to evaluate the effectiveness of soil vapor extraction (SVE) at recovering petroleum hydrocarbons from the vadose zone soil at Underground Storage Tank (UST) Cluster 1 and to optimize system operation. The results from the SVE performance evaluation testing were presented in the *Interim Data Summary UST Cluster 1 Soil Vapor Extraction Performance Evaluation Testing* report dated 15 March 2004.

From 4 to 7 April 2004, soil samples were collected from the UST Cluster 1 site and analyzed to determine the effectiveness of the SVE testing and to verify current concentrations of petroleum hydrocarbons in the vadose zone soil. The soil sampling and analysis was conducted in accordance with the *Final Project Plans, Verification Activities at Various Sites, NASA Crows Landing Flight Facility, Crows Landing, California* (Shaw, 2003). The proposed soil sample locations and sampling and analysis rationale were presented in the SVE performance evaluation testing interim data summary report. This transmittal presents a summary of the results of the soil sampling and analysis.

Soil samples were collected from the locations shown in Figure 1. The proposed locations were based on previous sample locations, soil vapor concentrations, and space limitations at the site. Soil samples were collected from three discreet depths at each of the thirteen sample locations. The proposed depths targeted the area near the bottom of the tank excavation (30 feet below ground surface), the area between the former tank location and groundwater surface (40 feet below ground surface), and the area above the groundwater surface and capillary fringe (55 feet below ground surface). These depths were consistent with previously collected sample depths. Boring logs were generated from continuous soil samples collected from ground surface to the total boring depth at each sample location and are included in Attachment A.

Soil samples were collected by direct-push techniques as described in the work plan. The samples were analyzed for total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) in accordance with the sampling and analysis plan. The samples were also analyzed for

semi-volatile organic compounds (SVOCs) in accordance with Request for Information (RFI) Number 014. The laboratory analytical results are included in Attachment B.

A summary of the results from the soil sample analysis is included in Table 1. Gasoline range hydrocarbons were detected in 10 of the 39 samples with a maximum concentration of 280 mg/kg in soil boring CL1-GP-07 at a depth of 30 feet below ground surface. Six of the gasoline range detections were less than 50 mg/kg. A note from the laboratory on all gasoline detections indicates that the compounds detected did not resemble gasoline and most of the peaks represented relatively longer chain hydrocarbons. Most of the shorter chain hydrocarbons (more volatile) were likely removed by the SVE treatment process.

Diesel range hydrocarbons were detected in 18 of the 39 samples with a maximum concentration of 12,000 mg/kg in soil boring CL1-GP-05 at a depth of 30 feet below ground surface. Eight of the diesel range detections were less than 100 mg/kg. A note from the laboratory on most diesel detections indicates that the samples did not represent diesel but were a mixture of compounds in the diesel and JP-5 range with some sample results similar to the JP-5 standard and other results indicating that the sample contained a few individual compounds within the diesel range.

Several VOC including acetone, 2-butanone, butylbenzenes, isopropylbenzene, p-isopropyltoluene, naphthalene, trimethylbenzenes, and tert-butyl alcohol were detected in samples that also had detections of gasoline and diesel range hydrocarbons. The highest concentrations and largest number of individual VOCs were detected in samples CL1-GP-05(30') (130 mg/kg gasoline and 12,000 mg/kg diesel), CL1-GP-07(30') (280 mg/kg gasoline and 9,700 mg/kg diesel), and CL1-GP-10(55') (110 mg/kg gasoline and 620 mg/kg diesel).

SVOCs were detected in several samples which also contained elevated concentrations of gasoline and/or diesel. Naphthalene and 2-methylnaphthalene were detected in 8 of the 39 samples. Fluorene was detected in only 1 sample. Phenanthrene was detected in only two samples at estimated concentration below the reporting limit.

In general the data indicates that the SVE system was effective at reducing the concentrations of volatile compounds at the site. The contaminants remaining at the site are longer chain hydrocarbons in the diesel/JP-5 range and selected VOCs and SVOCs where high concentrations of diesel range hydrocarbons are present. Soil samples collected near the SVE wells where long-term performance evaluation testing was conducted contain low to non-detect concentrations of petroleum hydrocarbons. The highest concentrations of petroleum hydrocarbons in soil were measured at 30 and 40 feet below ground surface in areas where minimal or no direct long-term SVE testing was conducted, although measurement collected during SVE testing indicated these areas were within the radius of influence of the extraction system.

The distribution of data at the site indicates that the SVE treatment was effective at reducing the extent of impact to three small areas where high concentrations persist. Two main areas of high concentrations remain at borings CL1-GP-05 and CL1-GP-07 at the depth of 30 feet below ground surface. Relatively lower concentrations of hydrocarbons also remain at boring CL1-GP-07 at a depth of 40 feet below ground surface. Another main area of high concentrations

remains at and near boring CL1-GP-08 at a depth of 40 feet below ground surface. Relatively lower concentrations of hydrocarbons also remain near boring CL1-GP-08 at borings CL1-GP-04 and CL1-GP0-09 at a depth of 40 feet below ground surface and at borings CL1-GP-08 and CL1-GP-04 at a depth of 55 feet below ground surface. Relatively lower concentrations of hydrocarbons also remain in and area near borings CL1-GP-10 and CL1-GP-13 at a depth of 55 feet below ground surface. The highest concentrations of petroleum hydrocarbons were measured in samples collected from 30 and 40 feet below ground surface. Relatively lower concentrations were measured in samples collected at or near the groundwater table.

The data from the soil sampling and analysis indicates that the SVE testing was effective at reducing the concentrations of volatile compounds and was effective at reducing the extent of impact to several smaller areas with elevated concentrations of longer chain hydrocarbons. Areas where extensive SVE performance evaluation testing was conducted contain low to non-detect concentrations of petroleum hydrocarbons in soil. The smaller areas where elevated concentrations of petroleum hydrocarbons remained in soil received minimal direct SVE treatment. Data from the soil sampling and analysis will be used to determine the risk associated with the compounds remaining in place at UST Cluster 1. Because of the depths of the contamination, the primary risk is assumed to be leaching of the compounds to groundwater. The data will also be used to develop and evaluate corrective action alternatives, as required, which will be included in the Corrective Action Plan currently being revised.

cc: B Hulet
T Barry
T Fenger
Project File

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SHAW TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT : N62474-98-D-2076 **DOCUMENT CONTROL NUMBER : 8014.0**

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Southwest Division
Naval Facilities Engineering Command
Ronald Fuller, 02R1.RF
1230 Columbia St., Suite 870
San Diego, CA 92101

Date : June 16, 2004

CTO : 0086

Location: NASA Crows Landing

FROM: P D Marini, for
Bob Hulet
Project Manager

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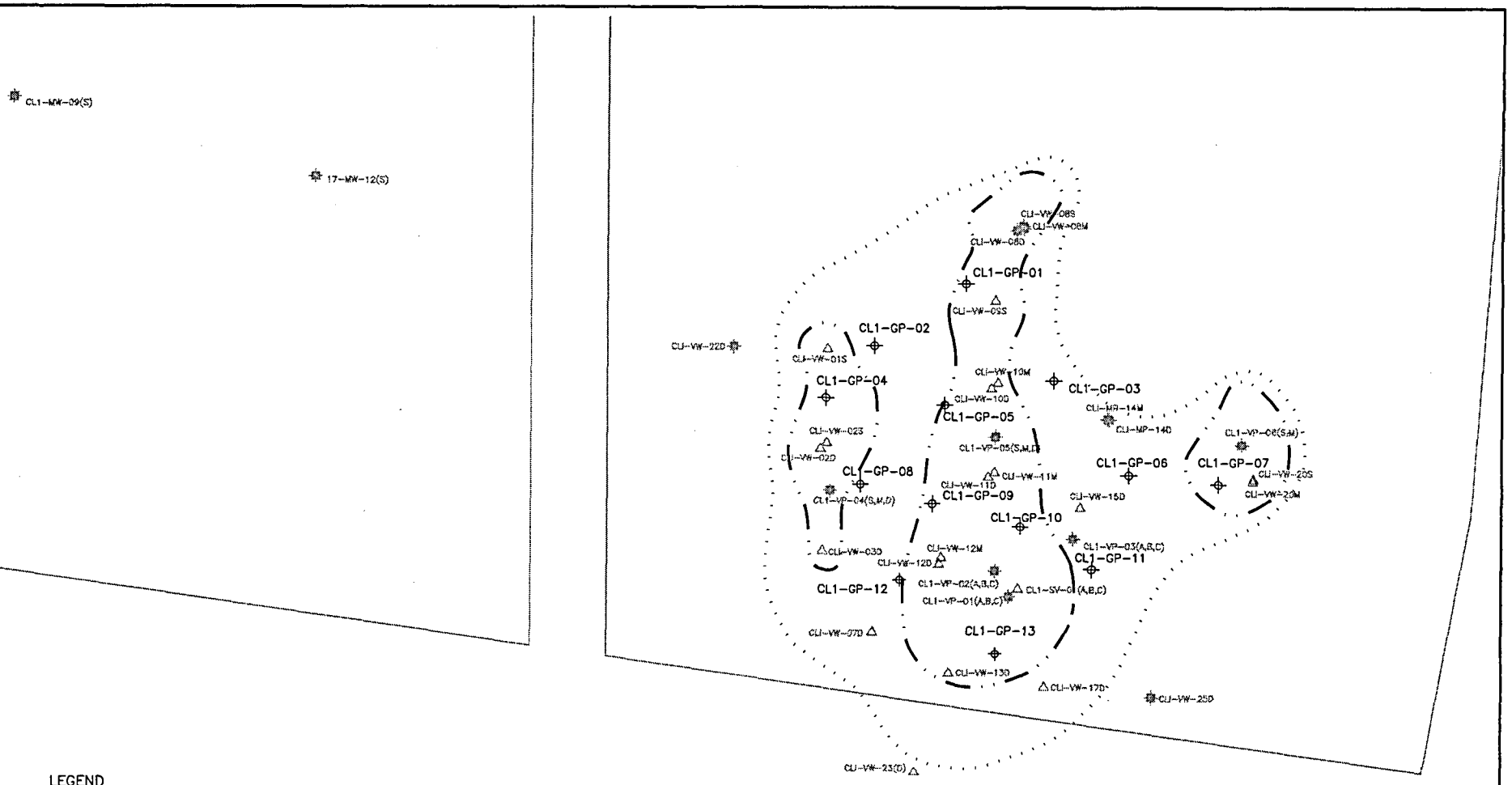

LEGEND

- SOIL SAMPLE LOCATION
- VENT WELL LOCATION
- VAPOR MONITORING POINT
- APPROXIMATE EXTENT OF PETROLEUM CONTAMINATION IN SOIL
- APPROXIMATE EXTENT OF TPH-P CONTAMINATION ≥ 100 MILLIGRAMS PER KILOGRAM (mg/kg) IN SOIL
- A,B,C — A = SHALLOW DEPTH, B = MEDIUM DEPTH, C = DEEP DEPTH
- S,M,D — S= SHALLOW DEPTH, M = MEDIUM DEPTH, D = DEEP DEPTH

SCALE

0 40 80 FEET

Shaw Environmental, Inc.

NASA
CROWS LANDING FLIGHT FACILITY
CROWS LANDING, CALIFORNIA

FIGURE 1

SOIL SAMPLING LOCATIONS

X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
basemap10-03	CONCORD	SJZ 6/3/04	TF 6/3/04	BH 6/3/04	836557-B56

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-01(30')	CL1-GP-01(40')	CL1-GP-01(55')	CL1-GP-02(30')	CL1-GP-02(40')
Date Sampled	Method	4/5/2004	4/5/2004	4/5/2004	4/5/2004	4/5/2004
Northing		1971776.10	1971776.10	1971776.10	1971813.70	1971813.70
Easting		6385695.00	6385695.00	6385695.00	6385669.40	6385669.40
Sample Depth (feet bgs[1])		30	40	55	30	40
percent moisture	ASTM-D2216	14.2 %	5.7 %	12.4 %	12.5 %	15.5 %
TPH-gasoline	M8015V	<0.51 mg/kg	<0.50 mg/kg	<0.62 mg/kg	<0.60 mg/kg	<0.57 mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.51 mg/kg	<0.50 mg/kg	<0.62 mg/kg	<0.60 mg/kg	<0.57 mg/kg
TPH-diesel	M8015E	**59**[a] mg/kg	<11 mg/kg	<11 mg/kg	<11 mg/kg	<12 mg/kg
TPH-motor oil	M8015E	<12 mg/kg	<11 mg/kg	<11 mg/kg	<11 mg/kg	<12 mg/kg
acetone	8260	**0.023J** mg/kg	<0.120 mg/kg	<0.110 mg/kg	<0.100 mg/kg	<0.130 mg/kg
benzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
2-butanone(MEK)	8260	**0.007J** mg/kg	<0.120 mg/kg	<0.110 mg/kg	<0.100 mg/kg	<0.130 mg/kg
sec-butylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
tert-butylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
carbon disulfide	8260	<0.120J mg/kg	<0.120J mg/kg	<0.110J mg/kg	<0.100J mg/kg	<0.130J mg/kg
cis-1,2-dichloroethene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
ethylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
isopropylbenzene (cumene)	8260	**0.0008J** mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
p-isopropyltoluene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
methylene chloride	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
naphthalene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
n-propylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
toluene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
trichloroethene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
1,2,4-trimethylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
1,3,5-trimethylbenzene	8260	<0.0058 mg/kg	<0.0062 mg/kg	<0.0053 mg/kg	<0.005 mg/kg	<0.0063 mg/kg
xylenes(total)	8260	<0.012 mg/kg	<0.012 mg/kg	<0.011 mg/kg	<0.010 mg/kg	<0.013 mg/kg
tert-butyl alcohol	8260	**0.170** mg/kg	<0.025 mg/kg	<0.021 mg/kg	<0.020 mg/kg	<0.025 mg/kg
fluorene	8270C	<0.0058 mg/kg	<0.0053 mg/kg	<0.0057 mg/kg	<0.0057 mg/kg	<0.0059 mg/kg
2-methylnaphthalene	8270C	<0.0058 mg/kg	<0.0053 mg/kg	<0.0057 mg/kg	<0.0057 mg/kg	<0.0059 mg/kg
naphthalene	8270C	<0.0058 mg/kg	<0.0053 mg/kg	<0.0057 mg/kg	<0.0057 mg/kg	<0.0059 mg/kg
phenanthrene	8270C	**0.004J** mg/kg	<0.0053 mg/kg	<0.0057 mg/kg	<0.0057 mg/kg	<0.0059 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chromatogram also contained an isolated peak at about C11 range.

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the peaks in the chromatogram correspond to the heavier portion of the chain.

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-02(55')	CL1-GP-03(30')	CL1-GP-03(40')	CL1-GP-03(55')	CL1-GP-04(30')
Date Sampled	Method	4/5/2004	4/7/2004	4/7/2004	4/7/2004	4/5/2004
Northing		1971813.70	1971739.70	1971739.70	1971739.70	1971833.80
Easting		6385669.40	6385655.40	6385655.40	6385655.40	6385648.40
Sample Depth (feet bgs[1])		55	30	40	55	30
percent moisture	ASTM-D2216	14.4 %	15.3 %	15.1 %	14.7 %	3.0 %
TPH-gasoline	M8015V	<0.50 mg/kg	<0.56 mg/kg	<0.61 mg/kg	<0.59 mg/kg	<0.52 mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.50 mg/kg	<0.56 mg/kg	<0.61 mg/kg	<0.59 mg/kg	<0.52 mg/kg
TPH-diesel	M8015E	9J mg/kg	2J mg/kg	<12 mg/kg	<12 mg/kg	<10 mg/kg
TPH-motor oil	M8015E	<12 mg/kg	<12 mg/kg	<12 mg/kg	<12 mg/kg	<10 mg/kg
acetone	8260	<0.110 mg/kg	<0.099 mg/kg	<0.100 mg/kg	<0.096 mg/kg	<0.120 mg/kg
benzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
2-butanone(MEK)	8260	<0.110 mg/kg	<0.099 mg/kg	<0.100 mg/kg	<0.096 mg/kg	<0.120 mg/kg
sec-butylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
tert-butylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
carbon disulfide	8260	<0.110J mg/kg	<0.099J mg/kg	<0.100J mg/kg	<0.096J mg/kg	<0.120J mg/kg
cis-1,2-dichloroethene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
ethylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
isopropylbenzene (cumene)	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
p-isopropyltoluene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
methylene chloride	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
naphthalene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
n-propylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
toluene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
trichloroethene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
1,2,4-trimethylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
1,3,5-trimethylbenzene	8260	<0.0055 mg/kg	<0.005 mg/kg	<0.005 mg/kg	<0.0048 mg/kg	<0.0061 mg/kg
xylenes(total)	8260	<0.011 mg/kg	<0.0099 mg/kg	<0.010 mg/kg	<0.0096 mg/kg	<0.012 mg/kg
tert-butyl alcohol	8260	0.18 mg/kg	<0.020 mg/kg	<0.020 mg/kg	<0.019 mg/kg	<0.024 mg/kg
fluorene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0052 mg/kg
2-methylnaphthalene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0052 mg/kg
naphthalene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0052 mg/kg
phenanthrene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0059 mg/kg	<0.0052 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-04(40')	CL1-GP-04(55')	CL1-GP-05(30')	CL1-GP-05(40')	CL1-GP-05(55')
Date Sampled	Method	4/5/2004	4/5/2004	4/6/2004	4/6/2004	4/6/2004
Northing		1971833.80	1971833.80	1971784.50	1971784.50	1971784.50
Easting		6385648.40	6385648.40	6385645.40	6385645.40	6385645.40
Sample Depth (feet bgs[1])		40	55	30	40	55
percent moisture	ASTM-D2216	10 %	15.0 %	13.6 %	3.2 %	15.7 %
TPH-gasoline	M8015V	<0.56 mg/kg	**2.5**[c] mg/kg	**130**[c] mg/kg	<0.56 mg/kg	**0.4J**[c] mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.56 mg/kg	<0.53 mg/kg	<29 mg/kg	<0.56 mg/kg	<0.73 mg/kg
TPH-diesel	M8015E	**250**[b] mg/kg	**430**[b] mg/kg	**12,000**[b] mg/kg	<10 mg/kg	**10J** mg/kg
TPH-motor oil	M8015E	<56 mg/kg	<59 mg/kg	<1200 mg/kg	**1J** mg/kg	**1J** mg/kg
acetone	8260	<11 mg/kg	<12 mg/kg	<12 mg/kg	<0.110 mg/kg	<0.120 mg/kg
benzene	8260	<0.560 mg/kg	<0.590 mg/kg	<0.580 mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
2-butanone(MEK)	8260	<11 mg/kg	<12 mg/kg	<12 mg/kg	<0.110 mg/kg	<0.120 mg/kg
sec-butylbenzene	8260	<0.560 mg/kg	<0.590 mg/kg	**2.4** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
tert-butylbenzene	8260	<0.560 mg/kg	<0.590 mg/kg	**0.170J** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
carbon disulfide	8260	<11 mg/kg	<12 mg/kg	<12 mg/kg	<0.110J mg/kg	<0.120J mg/kg
cis-1,2-dichloroethene	8260	<0.560 mg/kg	<0.590 mg/kg	<0.580 mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
ethylbenzene	8260	<0.560 mg/kg	<0.590 mg/kg	<0.580 mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
isopropylbenzene (cumene)	8260	<0.560 mg/kg	<0.590 mg/kg	**0.061J** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
p-isopropyltoluene	8260	<0.560 mg/kg	<0.590 mg/kg	**3.2** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.560 mg/kg	<0.590 mg/kg	<0.580 mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
methylene chloride	8260	<0.560 mg/kg	<0.590 mg/kg	**0.530J** mg/kg	**0.004J** mg/kg	**0.003J** mg/kg
naphthalene	8260	<0.560 mg/kg	<0.590 mg/kg	**10** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
n-propylbenzene	8260	<0.560 mg/kg	<0.590 mg/kg	**0.150J** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
toluene	8260	**0.099J** mg/kg	<0.590 mg/kg	**0.110J** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
trichloroethene	8260	<0.560 mg/kg	<0.590 mg/kg	<0.580 mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
1,2,4-trimethylbenzene	8260	**0.081J** mg/kg	<0.590 mg/kg	**10** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
1,3,5-trimethylbenzene	8260	<0.560 mg/kg	<0.590 mg/kg	**2.4** mg/kg	<0.0057 mg/kg	<0.0061 mg/kg
xylenes(total)	8260	**0.110J** mg/kg	<1.2 mg/kg	**0.210J** mg/kg	<0.011 mg/kg	<0.012 mg/kg
tert-butyl alcohol	8260	<2.2 mg/kg	<2.4 mg/kg	<2.3 mg/kg	<0.023 mg/kg	**0.722** mg/kg
fluorene	8270C	<0.0056 mg/kg	<0.0059 mg/kg	<0.580 mg/kg	<0.0052 mg/kg	<0.0059 mg/kg
2-methylnaphthalene	8270C	<0.0056 mg/kg	<0.0059 mg/kg	**10** mg/kg	<0.0052 mg/kg	**0.002J** mg/kg
naphthalene	8270C	<0.0056 mg/kg	<0.0059 mg/kg	**6.5** mg/kg	<0.0052 mg/kg	<0.0059 mg/kg
phenanthrene	8270C	<0.0056 mg/kg	<0.0059 mg/kg	<0.580 mg/kg	<0.0052 mg/kg	<0.0059 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-06(30')	CL1-GP-06(40')	CL1-GP-06(55')	CL-99-82	CL1-GP-07(30')
Date Sampled	Method	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004
Northing		1971708.90	1971708.90	1971708.90	1971708.90	1971672.20
Easting		6385616.60	6385616.60	6385616.60	6385616.60	6385612.90
Sample Depth (feet bgs[1])		30	40	55	duplicate of CL1-GP-06(55')	30
percent moisture	ASTM-D2216	14.2 %	13.1 %	14.6 %	16.1 %	10.7 %
TPH-gasoline	M8015V	<0.51 mg/kg	<0.54 mg/kg	<0.54 mg/kg	<0.52 mg/kg	**280[c]** mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.51 mg/kg	<0.54 mg/kg	<0.54 mg/kg	<0.52 mg/kg	<56 mg/kg
TPH-diesel	M8015E	<12 mg/kg	<12 mg/kg	<12 mg/kg	<12 mg/kg	**9,700[b]** mg/kg
TPH-motor oil	M8015E	<12 mg/kg	<12 mg/kg	<12 mg/kg	<12 mg/kg	<1100 mg/kg
acetone	8260	<0.090 mg/kg	<0.100 mg/kg	<0.110 mg/kg	<0.110 mg/kg	<56 mg/kg
benzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	<2.8 mg/kg
2-butanone(MEK)	8260	<0.090 mg/kg	<0.100 mg/kg	<0.110 mg/kg	<0.110 mg/kg	<56 mg/kg
sec-butylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**6.9** mg/kg
tert-butylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**0.570J** mg/kg
carbon disulfide	8260	<0.090J mg/kg	<0.100J mg/kg	<0.110J mg/kg	<0.110J mg/kg	<56 mg/kg
cis-1,2-dichloroethene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	<2.8 mg/kg
ethylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	<2.8 mg/kg
isopropylbenzene (cumene)	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**6.0** mg/kg
p-isopropyltoluene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**6.0** mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	<2.8 mg/kg
methylene chloride	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	**0.003J** mg/kg	<2.8 mg/kg
naphthalene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**16.0** mg/kg
n-propylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**4.0** mg/kg
toluene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**0.390J** mg/kg
trichloroethene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	<2.8 mg/kg
1,2,4-trimethylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**46.0** mg/kg
1,3,5-trimethylbenzene	8260	<0.0045 mg/kg	<0.005 mg/kg	<0.0056 mg/kg	<0.0055 mg/kg	**16.0** mg/kg
xylenes(total)	8260	<0.009 mg/kg	<0.010 mg/kg	<0.011 mg/kg	<0.011 mg/kg	**2.9J** mg/kg
tert-butyl alcohol	8260	<0.018 mg/kg	<0.020 mg/kg	<0.022 mg/kg	<0.022 mg/kg	<11 mg/kg
fluorene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0058 mg/kg	<0.220 mg/kg
2-methylnaphthalene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0058 mg/kg	**15.3** mg/kg
naphthalene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0058 mg/kg	**8.65** mg/kg
phenanthrene	8270C	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0058 mg/kg	<0.220 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-07(40')	CL1-GP-07(55')	CL1-GP-08(30')	CL1-GP-08(40')	CL1-GP-08(55')
Date Sampled	Method	4/7/2004	4/7/2004	4/6/2004	4/6/2004	4/6/2004
Northing		1971672.20	1971672.20	1971819.30	1971819.30	1971819.30
Easting		6385612.90	6385612.90	6385612.90	6385612.90	6385612.90
Sample Depth (feet bgs[1])		40	55	30	40	55
percent moisture	ASTM-D2216	7.2 %	13.1 %	15.3 %	13.1 %	15.9 %
TPH-gasoline	M8015V	<0.57[c] mg/kg	<0.55 mg/kg	<0.73 mg/kg	150[c] mg/kg	30[c] mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.57 mg/kg	<0.55 mg/kg	<0.73 mg/kg	<29 mg/kg	<30 mg/kg
TPH-diesel	M8015E	160[a] mg/kg	2J[a] mg/kg	<12 mg/kg	5,400[b] mg/kg	680[b] mg/kg
TPH-motor oil	M8015E	<11 mg/kg	<12 mg/kg	1J mg/kg	<1200 mg/kg	<120 mg/kg
acetone	8260	<0.140 mg/kg	<0.110 mg/kg	<0.110 mg/kg	<12 mg/kg	0.020J mg/kg
benzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
2-butanone(MEK)	8260	<0.140 mg/kg	<0.110 mg/kg	<0.110 mg/kg	<12 mg/kg	<0.120 mg/kg
sec-butylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	1.3 mg/kg	<0.0058 mg/kg
tert-butylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	0.072J mg/kg	<0.0058 mg/kg
carbon disulfide	8260	<0.140J mg/kg	<0.110J mg/kg	<0.110J mg/kg	<12 mg/kg	0.005J mg/kg
cis-1,2-dichloroethene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
ethylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
isopropylbenzene (cumene)	8260	<0.0069 mg/kg	0.003J mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
p-isopropyltoluene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	2.1 mg/kg	<0.0058 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
methylene chloride	8260	<0.0069 mg/kg	<0.0053 mg/kg	0.003J mg/kg	0.450J mg/kg	0.003J mg/kg
naphthalene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
n-propylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
toluene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
trichloroethene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
1,2,4-trimethylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	<0.580 mg/kg	<0.0058 mg/kg
1,3,5-trimethylbenzene	8260	<0.0069 mg/kg	<0.0053 mg/kg	<0.0054 mg/kg	0.180J mg/kg	<0.0058 mg/kg
xylenes(total)	8260	<0.014 mg/kg	<0.011 mg/kg	<0.011 mg/kg	<1.2 mg/kg	<0.012 mg/kg
tert-butyl alcohol	8260	<0.028 mg/kg	0.054 mg/kg	<0.021 mg/kg	<2.3 mg/kg	0.093 mg/kg
fluorene	8270C	0.048 mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.580 mg/kg	<0.059J mg/kg
2-methylnaphthalene	8270C	0.473 mg/kg	<0.0058 mg/kg	0.02 mg/kg	2.0 mg/kg	<0.059J mg/kg
naphthalene	8270C	0.092 mg/kg	<0.0058 mg/kg	0.025 mg/kg	1.0 mg/kg	<0.059J mg/kg
phenanthrene	8270C	0.010J mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.580 mg/kg	<0.059J mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-09(30')	CL1-GP-09(40')	CL1-GP-09(55')	CL1-GP-10(30')	CL1-GP-10(40')
Date Sampled	Method	4/6/2004	4/6/2004	4/6/2004	4/7/2004	4/7/2004
Northing		1971789.40	1971789.40	1971789.40	1971753.20	1971753.20
Easting		6385605.00	6385605.00	6385605.00	6385595.70	6385595.70
Sample Depth (feet bgs[1])		30	40	55	30	40
percent moisture	ASTM-D2216	3.8 %	12.2 %	16.6 %	11.3 %	13.3 %
TPH-gasoline	M8015V	<0.56 mg/kg	<0.52 mg/kg	**21J**[c] mg/kg	<0.47 mg/kg	<0.58 mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.56 mg/kg	<0.52 mg/kg	<30 mg/kg	<0.47 mg/kg	<0.58 mg/kg
TPH-diesel	M8015E	<10 mg/kg	**310**[b] mg/kg	**79**[b] mg/kg	<11 mg/kg	<12 mg/kg
TPH-motor oil	M8015E	<10 mg/kg	<57 mg/kg	<12 mg/kg	<11 mg/kg	<12 mg/kg
acetone	8260	<0.140 mg/kg	<0.110 mg/kg	<12 mg/kg	<0.099 mg/kg	<0.120 mg/kg
benzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
2-butanone(MEK)	8260	<0.140 mg/kg	<0.110 mg/kg	<12 mg/kg	<0.099 mg/kg	<0.120 mg/kg
sec-butylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
tert-butylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
carbon disulfide	8260	<0.140J mg/kg	<0.110J mg/kg	<12 mg/kg	<0.099J mg/kg	<0.120J mg/kg
cis-1,2-dichloroethene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
ethylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
isopropylbenzene (cumene)	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
p-isopropyltoluene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
methylene chloride	8260	**0.004J** mg/kg	**0.003J** mg/kg	**0.530J** mg/kg	<0.005 mg/kg	<0.0058 mg/kg
naphthalene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
n-propylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
toluene	8260	**0.0009J** mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
trichloroethene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
1,2,4-trimethylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
1,3,5-trimethylbenzene	8260	<0.0069 mg/kg	<0.0056 mg/kg	<0.600 mg/kg	<0.005 mg/kg	<0.0058 mg/kg
xylenes(total)	8260	<0.014 mg/kg	<0.011 mg/kg	<1.2 mg/kg	<0.0099 mg/kg	<0.012 mg/kg
tert-butyl alcohol	8260	<0.027 mg/kg	<0.023 mg/kg	<2.4 mg/kg	<0.020 mg/kg	<0.023 mg/kg
fluorene	8270C	<0.0052 mg/kg	<0.0057 mg/kg	<0.060 mg/kg	<0.0056 mg/kg	<0.0058 mg/kg
2-methylnaphthalene	8270C	<0.0052 mg/kg	**0.008** mg/kg	<0.060 mg/kg	<0.0056 mg/kg	<0.0058 mg/kg
naphthalene	8270C	<0.0052 mg/kg	**0.007** mg/kg	<0.060 mg/kg	<0.0056 mg/kg	<0.0058 mg/kg
phenanthrene	8270C	<0.0052 mg/kg	<0.0057 mg/kg	<0.060 mg/kg	<0.0056 mg/kg	<0.0058 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-10(55')	CL1-GP-11(30')	CL1-GP-11(40')	CL1-GP-11(55')	CL1-GP-12(30')
Date Sampled	Method	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004
Northing		1971753.20	1971723.70	1971723.70	1971723.70	1971802.90
Easting		6385595.70	6385578.20	6385578.20	6385578.20	6385573.90
Sample Depth (feet bgs[1])		55	30	40	55	30
percent moisture	ASTM-D2216	13.8 %	13.5 %	15.6 %	16.4 %	10.5 %
TPH-gasoline	M8015V	**110**[c] mg/kg	<0.52 mg/kg	<0.52 mg/kg	**0.2J**[c] mg/kg	<0.56 mg/kg
TPH-jet fuel (JP-4)	M8015V	<29 mg/kg	<0.52 mg/kg	<0.52 mg/kg	<0.62 mg/kg	<0.56 mg/kg
TPH-diesel	M8015E	**620**[b] mg/kg	<12 mg/kg	**3J**[a] mg/kg	**7J**[b] mg/kg	<11 mg/kg
TPH-motor oil	M8015E	<120 mg/kg	<12 mg/kg	<12 mg/kg	<12 mg/kg	<11 mg/kg
acetone	8260	**2.1J** mg/kg	<0.090 mg/kg	<0.110 mg/kg	<0.130 mg/kg	<0.120 mg/kg
benzene	8260	<0.580 mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
2-butanone(MEK)	8260	<12 mg/kg	<0.090 mg/kg	<0.110 mg/kg	<0.130 mg/kg	<0.120 mg/kg
sec-butylbenzene	8260	**0.530J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
tert-butylbenzene	8260	**0.9** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
carbon disulfide	8260	<12 mg/kg	<0.090J mg/kg	<0.110J mg/kg	<0.130J mg/kg	<0.120J mg/kg
cis-1,2-dichloroethene	8260	**0.077J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
ethylbenzene	8260	<0.580 mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
isopropylbenzene (cumene)	8260	**0.210J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
p-isopropyltoluene	8260	**0.250J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.580 mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
methylene chloride	8260	<0.580 mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
naphthalene	8260	**1.5** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
n-propylbenzene	8260	<0.580 mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
toluene	8260	**0.061J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
trichloroethene	8260	**0.180J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
1,2,4-trimethylbenzene	8260	**0.9** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
1,3,5-trimethylbenzene	8260	**0.340J** mg/kg	<0.0045 mg/kg	<0.0055 mg/kg	<0.0066 mg/kg	<0.006 mg/kg
xylenes(total)	8260	<1.2 mg/kg	<0.009 mg/kg	<0.011 mg/kg	<0.013 mg/kg	<0.012 mg/kg
tert-butyl alcohol	8260	<2.3 mg/kg	<0.018 mg/kg	<0.022 mg/kg	**0.055** mg/kg	<0.024 mg/kg
fluorene	8270C	<0.058 mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0056 mg/kg
2-methylnaphthalene	8270C	**1.43** mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0056 mg/kg
naphthalene	8270C	**0.86** mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0056 mg/kg
phenanthrene	8270C	<0.058 mg/kg	<0.0058 mg/kg	<0.0059 mg/kg	<0.006 mg/kg	<0.0056 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Table 1 Summary of Soil Sample Analytical Results - UST Cluster 1

Sample ID		CL1-GP-12(40')	CL1-GP-12(55')	CL1-GP-13(30')	CL1-GP-13(40')	CL1-GP-13(55')
Date Sampled	Method	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004
Northing		1971802.90	1971802.90	1971763.30	1971763.30	1971763.30
Easting		6385573.90	6385573.90	6385543.80	6385543.80	6385543.80
Sample Depth (feet bgs[1])		40	55	30	40	55
percent moisture	ASTM-D2216	9.4 %	19.4 %	2.9 %	9.4 %	7.1 %
TPH-gasoline	M8015V	<0.55 mg/kg	<0.81 mg/kg	<0.57 mg/kg	<0.57 mg/kg	**2.0[c]** mg/kg
TPH-jet fuel (JP-4)	M8015V	<0.55 mg/kg	<0.81 mg/kg	<0.57 mg/kg	<0.57 mg/kg	<0.49 mg/kg
TPH-diesel	M8015E	<11 mg/kg	<12 mg/kg	<10 mg/kg	<11 mg/kg	**590[b]** mg/kg
TPH-motor oil	M8015E	<11 mg/kg	<12 mg/kg	<10 mg/kg	<11 mg/kg	<110 mg/kg
acetone	8260	<0.110 mg/kg	<0.160 mg/kg	<0.130 mg/kg	<0.100 mg/kg	<11 mg/kg
benzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
2-butanone(MEK)	8260	<0.110 mg/kg	<0.160 mg/kg	<0.130 mg/kg	<0.100 mg/kg	<11 mg/kg
sec-butylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
tert-butylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	**0.054J** mg/kg
carbon disulfide	8260	<0.110J mg/kg	<0.160J mg/kg	<0.130J mg/kg	<0.100J mg/kg	<11 mg/kg
cis-1,2-dichloroethene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
ethylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
isopropylbenzene (cumene)	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
p-isopropyltoluene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
methyl tert-butyl ether(MTBE)	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
methylene chloride	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
naphthalene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
n-propylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
toluene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	**0.079J** mg/kg
trichloroethene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
1,2,4-trimethylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	**0.110J** mg/kg
1,3,5-trimethylbenzene	8260	<0.0057 mg/kg	<0.0082 mg/kg	<0.0063 mg/kg	<0.0051 mg/kg	<0.540 mg/kg
xylenes(total)	8260	<0.011 mg/kg	<0.016 mg/kg	<0.013 mg/kg	<0.010 mg/kg	**0.079J** mg/kg
tert-butyl alcohol	8260	<0.023 mg/kg	<0.033 mg/kg	<0.025 mg/kg	<0.020 mg/kg	<2.2 mg/kg
fluorene	8270C	<0.0055 mg/kg	<0.0062 mg/kg	<0.0051 mg/kg	<0.0055 mg/kg	<0.054 mg/kg
2-methylnaphthalene	8270C	<0.0055 mg/kg	<0.0062 mg/kg	<0.0051 mg/kg	<0.0055 mg/kg	<0.054 mg/kg
naphthalene	8270C	<0.0055 mg/kg	<0.0062 mg/kg	<0.0051 mg/kg	<0.0055 mg/kg	<0.054 mg/kg
phenanthrene	8270C	<0.0055 mg/kg	<0.0062 mg/kg	<0.0051 mg/kg	<0.0055 mg/kg	<0.054 mg/kg

[1] below ground surface

[a] mixture in diesel and/or JP-5 range, and/or sample chron

[b] similar to JP-5 pattern.

[c] not a typical gasoline and/or JP-4 pattern. Most of the pe

Attachment A
Boring Logs

Drilling Log

Shaw

Soil Boring **CL1-GP-01**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 60.0 ft. | North: 1971776.1 ft. | East: 6385695 ft.
Top of Casing: 143.76 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/5/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Fill, 9% sand, 90% fines, trace gravel
2		50%				
4						At 4' Silt with Sand, brownish yellow (10YR 6/8), 5% very fine sand, 95% fines, non-plastic, stiff, dry.
6		75%				
8						
10		85%				At 10.5' Sandy Silt, yellow (10YR 7/8), 40-50% very fine sand, 50-60% fines, dry.
12					ML	
14		80%				(becomes slightly moist at 15 feet)
16						
18		75%				At 18' Silt with Sand and Clay, light olive brown (2.5Y 5/6), 5% very fine sand, 95% fines, non-plastic, soft to moderately stiff, moist.
20						At 20.5' Poorly Graded Sand with Silt, brownish yellow (10YR 6/8), 90% very fine to fine sand, 10% fines.
22		80%			SP	
24						Around 25'-25.5' sand becomes fine to very coarse with trace fine gravel.
26		90%				At 25.5' Sandy Silt, yellow (10YR 7/8), 25% very fine sand, 75% fines, non-plastic, moderately stiff, dry.
28					ML	(becomes soft at 28.5 feet)
30		80% CL1-GP-				

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-01**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		01 (30) 80%			ML	At 30' Silt, yellow (10YR 7/8), 2% very fine sand, 98% fines, soft, dry. **Sample No. CL1-GP-01 (30)** (becomes slightly moist at 32 feet)
32						
34		75%			SM	At 34' Silty Sand, light olive brown (2.5Y 5/8), 60% very fine sand, 40% fines, loose, dry.
36						
38		80%				(from 38.5'-40' feet sand becomes very fine to coarse with 10% fine gravel) **Sample No. CL1-GP-01 (40)**
40					SW	At 40' Well Graded Sand with Silt and Gravel, yellowish brown (10YR 5/4), 10% subrounded/subangular gravel (up to 8mm in size), 80% very fine to coarse sand, 10% fines, dense, dry.
42		CL1-GP-01 (40) 70%				
44					ML	At 43' Silt with Sand, light olive brown (2.5Y 5/4), 15% very fine sand, 85% fines.
46		90%				
48					SP	At 47' Poorly Graded Sand with Silt, light olive brown (2.5Y 5/6), 90% very fine sand, 10% fines, medium dense, slightly moist. (from 49'-50' sand becomes very fine to fine)
50		90%			CL	At 50.5' Lean Clay, light olive brown (2.5Y 5/4), 100% fines, low plasticity, very moist.
52					ML	At 52' Sandy Silt with Clay, 20% sand, 80% fines.
					SM	At 52.5' Silty Sand, light yellowish brown (2.5Y 6/4), 60-70% very fine sand, 30-40 fines, slightly moist.
54		90% CL1-GP-01 (55)			ML	At 53.5' Silt, olive yellow (2.5Y 6/8), trace very fine sand, 100% fines, non-plastic, soft, moist. **Sample no. CL1-GP-01 (55)** (becomes very moist to wet 56.5' to 57')
56						
58		100%			CL	At 57' Lean Clay, light olive brown (2.5Y 5/6), trace to 2% very fine sand, 96-98% fines, low plasticity, very stiff to hard. (note: no odor in entire soil boring)
60						
62						Total Depth = 60' bgs
64						
66						
68						
70						

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Drilling Log

Soil Boring **CL1-GP-02**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 60.0 ft. | North: 1971813.7 ft. | East: 6385669.4 ft.
Top of Casing: 143.96 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/5/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Fill (made up of sand, silt and gravel).
2		30%				
4					ML	At 3' Silt with Clay and Sand, dark yellowish brown (10YR 3/6), 5% very fine sand, 95% fines, non-plastic, hard, dry.
6		70%				
8						At 7.5' Sandy Silt, yellowish brown (10YR 5/6), 30% very fine sand, 70% fines, non-plastic, stiff, dry.
10		75%				
12					SM	At 11' Silty Sand, brownish yellow (10YR 6/8), 80% very fine sand, 20% fines, medium dense, dry.
14		90%				
16						
18		100%			ML	At 17.5' Silt with Sand, yellowish brown (10YR 5/6), 15% very fine sand, 85% fines, non-plastic, stiff, dry.
20						At 19.5' Silt with Clay, yellowish brown (10YR 5/6), 5% very fine to fine sand, 95% fines, non-plastic, stiff, dry.
22		90%				
24					SP	At 23.5' Poorly Graded Sand, brownish yellow (10YR 6/8), 98-100% very fine sand, trace to 2% fines, dense, slightly moist.
					SW	At 25' Gravelly Sand, subangular gravel (up to 6mm in size).
26		90%			ML	At 25.5' Clayey Silt, 100% fines.
28						At 27' Sandy Silt, brownish yellow (10YR 6/8), 50% very fine sand, 50% fines, dry.
30		90% CL1-GP-				

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-02**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		02 (30)			ML	**Sample No. CL1-GP-02 (30) (sample depth 29.5'-30')**
		90%				At 30.5' Silt, 5% very fine sand, 95% fines, slightly moist.
32					SP	At 31' Poorly Graded Sand with Silt, 90% very fine sand, 10% fines, dry.
						At 32' Silt, 100% fines.
34		85%				At 34' Sandy Silt, yellow (10YR 7/8), 40% very fine sand, 60% fines, slightly moist.
36					ML	(becomes yellowish brown (10YR 5/6) at 36' with 10% very fine sand, 90% fines, moist)
38		80%				At 38' Silt with Sand, yellowish brown (10YR 5/6), 10% very fine sand, 90% fines, very moist.
40						**Sample No. CL1-GP-02 (40)**
42		CL1-GP-02 (40) 90%			SW	At 40.5' Well Graded Sand with Silt and Gravel, light yellowish brown (10YR 6/4), 20% angular gravel (up to 4mm in size), 70% well graded sand, 10% fines, dense, dry.
						At 42.5' Silt with Sand, dark yellowish brown (10YR 4/6), 15% very fine sand, 85% fines, non-plastic, very stiff, dry.
44					ML	
46	1.4	95%				(sand content increases to approximately 40% at 46')
48					SM	At 48' Silty Sand, dark yellowish brown (10YR 4/6), 60% very fine sand, 40% fines.
50		90%			ML	At 49.5' Clayey Silt, light olive brown (2.5Y 5/6), 100% fines.
52					SM	At 51.5' Silty Sand, olive yellow (2.5Y 6/6), 60% very fine sand, 40% fines, non-plastic, stiff, dry.
54		95% CL1-GP-02 (55)				At 53' Silt with Sand, light olive brown (2.5Y 5/6), 25% very fine sand, 75% fines, non-plastic, slightly moist. (becomes very moist at 55')
56					ML	**Sample No. CL1-GP-02 (55)**
58		65%				(becomes wet at 57.5')
60						At 58.5' Clayey Silt, light olive brown (2.5Y 5/6), 100% fines, low plasticity, very stiff, moist. (note: no odor in entire soil boring)
62						Total Depth = 60.0' bgs
64						
66						
68						
70						

Drilling Log

Soil Boring **CL1-GP-03**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 56.0 ft. | North: 1971736.7 ft. | East: 6385655.4 ft.
Top of Casing: 144.02 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/7/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					ML	Fill (contains clayey silt with sand), yellowish brown (10YR 5/6), 10% sand, 80% fines, low to non-plastic, hard, dry. (trace gravel at surface)
2		75%				
4						
6		80%				
8						At 7' Sandy Silt, brownish yellow (10YR 6/8), 30% very fine sand, 70% fines, non-plastic, soft to medium stiff.
10		80%				
12						
14		95%			SP SM	At 13' Silty Sand, brownish yellow (10YR 6/8), 80-85% very fine sand, 15-20% fines, medium dense, slightly moist.
16						
18		90%			ML	At 18' Clayey Silt with Sand, dark yellowish brown (10YR 4/6), 15% very fine sand, 85% fines, low to non-plastic, stiff, dry.
20						
					SM	At 21' Silty Sand (same as from 13.0')
22		85%			ML	At 22' Clayey Silt, light olive brown (2.5Y 5/6), 100% fines, low plasticity, very stiff to hard, slightly moist.
24						
26		95%				At 26' Sandy Silt, light olive brown (2.5Y 5/6), 30% very fine sand, 70% fines, dry.
28					SP	At 27' Poorly Graded Sand with Silt, 90% very fine sand, 10% fines.
30		85% CL1-GP-			ML	At 29' Sandy Silt, light olive brown (2.5Y 5/6), 30% very fine sand, 70% fines, dry.

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-03**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		03 (30) 85%			ML	**Sample No. Cl1-GP-03 (30)**
32					SP	
					CL	At 32' Silty Clay, dark yellowish brown (10YR 4/6), 100% fines, low plasticity, soft to medium stiff, slightly moist.
34		80%			SM	(Silty Sand lense 34.0' to 34.75')
36					ML	At 34.75' Clayey Silt, yellowish brown (10YR 5/6), 100% fines, low plasticity, soft, moist.
38		75%			SP	At 37' Poorly Graded Sand with Silt, yellowish brown (10YR 5/6), 90% very fine sand, 10% fines.
					ML	At 38' Clayey Silt, yellowish brown (10YR 5/6), 100% fines, low plasticity, soft, moist.
40						**Sample No. CL1-GP-03 (40)**
42		CL1-GP-03 (40) 85%			SW	At 40.5' Well Graded Sand with Silt and Gravel, brownish yellow (10YR 6/6), 10% fine gravel, 80% well graded sand, 10% fines, medium dense, slightly moist. (no hydrocarbon odor) (two downward coarsening sequences in this interval.)
44					ML	At 42.5' Sandy Silt, brownish yellowish (10YR 6/8), 40% very fine sand, 60% fines, slightly moist.
46		95%				(from 45.5' to 46' Clayey Silt lenses, 100% fines)
48					SM	At 47' Silty Sand, yellowish brown (10YR 5/6), 25% very fine sand, 75% fines, medium dense, slightly moist.
50		90%			ML	At 49.5' Clayey Silt, 100% fines, non-plastic to low plasticity, very stiff, slightly moist.
52						At 52' Sandy Silt, yellowish brown (10YR 5/6), 30% very fine sand, 70% fines, non-plastic, soft to medium, stiff, moist.
54		85% CL1-GP-03 (55)				**Sample No. CL1-GP-03) (55)**
56						(becomes very moist, soft at 55.5') (note: no odors in this entire boring)
58						Total Depth = 56.0' bgs
60						
62						
64						
66						
68						
70						

Drilling Log

Shaw™

Soil Boring **CL1-GP-04**

Project	Crows Landing	Owner	U.S. Navy				
Location	Cluster 1			Proj. No.	836557		
Surface Elev.	NA	Total Hole Depth	60.0 ft.	North	1971833.8 ft.	East	6385648.4 ft.
Top of Casing	144.55 ft.	Water Level Initial	NA	Static	NA	Diameter	2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA		
Casing: Dia	NA	Length	NA	Type	NA		
Fill Material	Grout			Rig/Core	AMS Power Probe		
Drill Co.	RSI	Method	Direct Push				
Driller	NA	Log By	Joe Strack	Date	4/5/04	Permit #	NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941				

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Coarse Fill: yellowish brown (10YR 5/8) to dark brown (10YR 6/6), 40% gravel, 20% very fine sand, 40% fines, dense, dry.
2		50%				
4						(Approximate bottom of fill: poor core recovery)
6		40%				
8						At 7' Silt with Clay, dark yellowish brown (10YR 3/6), 5% very fine sand, 95% fines, non-plastic to low plasticity, stiff, slightly moist.
10		85%			ML	At 9' Sandy Silt, yellowish brown (10YR 5/8), 40% very fine sand, 60% fines, dry.
12						
14		80%			SM	At 14' Silty Sand, brownish yellow (10YR 6/8), 80% very fine sand, 20% fines, loose, dry.
16					ML	At 15.5' Sandy Silt, yellowish brown (10YR 5/8), 40% very fine sand, 60% fines, dry.
18		90%			CL	At 17.5' Silty Clay, yellowish brown (10YR 5/6), 100% fines, low to non-plastic, slightly moist.
20						At 19.5' Silt with Clay and Sand, yellowish brown (10YR 5/6), 10% very fine to fine sand, 90% fines, non-plastic to low plasticity, stiff, slightly moist.
22		75%			ML	
24						
26		75%				At 24.5' Poorly Graded Sand with Silt, brownish yellow (10YR 6/8), 95% very fine sand, 5% fines, medium dense, dry.
28					SP	
30		70% CL1-GP-				(becomes pink (7.5YR 7/4))

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Drilling Log

Soil Boring **CL1-GP-04**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		04 (30)			SP	**Sample No. CL1-GP-04 (30)**
32		70%			ML	At 31' Silt with Sand, light brown (7.5YR 6/4), 10% very fine sand, 90% fines, slightly moist.
34		75%			SW	At 33' Well Graded Sand with Gravel, brownish yellow (10YR 6/6), 15% subrounded to subangular gravel (up to 4mm in size), 80% well graded sand, loose, dry.
36					ML	At 35' Silt, yellowish brown (10YR 5/8), 100% fines, slightly moist. (at 37'-37.4' and 39'-39.5' approximately 20% very fine sand)
38		75%				
40					SP	At 39.5' Poorly Graded Sand with Silt, yellowish brown (10YR 6/4), 90% very fine sand, 10% fines. **Sample No. CL1-GP-04 (40)** (moderate hydrocarbon odor at 40'-41')
42		CL1-GP-04 (40) 80%			SW	At 42.5' Well Graded Sand with Gravel, 10% gravel (up to 4mm in size), 90% well graded sand.
44					ML	At 43' Clayey Silt, light olive brown (2.5Y 5/6), mottled with dark olive brown (2.5Y 3/3), 100% fines, stiff, slightly moist, strong hydrocarbon odor.
46	105	85%				At 44.5' Silt with Sand, light olive brown (2.5Y 5/6), 15% very fine sand, 85% fines, loose, slightly moist, moderate to strong hydrocarbon odor.
48						
50		100%			SP	(Sand lense, 90% fine sand, dry)
52					ML	At 50' Lean Clay, light olive brown (2.5Y 5/4), 100% fines, very stiff, slightly moist, moderate hydrocarbon odor. At 52' Silt with Sand, olive yellow (2.5Y 6/6), 20% very fine sand, 80% fines.
54		100% CL1-GP-04 (55)				
56						**Sample No. CL1-GP-04 (55)** (around 55'-55.5' stiff, slightly moist, moderate hydrocarbon odor)
58	198	100%			CL ML	At 56' Clayey Silt/Silty Clay, yellowish brown (10YR 5/8), with olive brown (2.5Y 4/4) to very dark gray mottling (staining), 5% very fine sand, 95% fines, soft, very moist. (at 57' becomes hard, dry and stained in fractures) (at 57.5' to 60' strong hydrocarbon odor)
60						Total Depth = 60.0' bgs
62						
64						
66						
68						
70						

Drilling Log

Soil Boring **CL1-GP-05**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 56.0 ft. | North: 1971784.5 ft. | East: 6385645.4 ft.
Top of Casing: 144.25 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/6/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					CL	Fill, yellowish brown (10YR 5/6), 10% gravel, 10% sand, 80% fines, hard, compact, dry.
2		65%				
4						At 3' Fill (composed of silty clay), olive brown (2.5YR 4/4) with light olive brown (2.5Y 5/6) mottling, trace gravel, 100% fines, low plasticity, stiff to hard, slightly moist.
6		85%				
8						
10		75%			GM	At 9.5' Fill (composed of Silty Gravel with Sand), 50% gravel (up to 2-inches in size), 30% sand, 20% fines, dense, dry.
12						
14		65%				(some clay incorporated into fill 14.5'-16').
16						(sampler clogged by gravel fragment; pulled tools to clear obstruction and repush to 20 feet before resume sampling)
18						(driller reports easy push in 16-20 feet interval and believes fill bottom located at approximately 16' bgs)
20					ML	At 20' Clayey Silt, light olive brown (2.5Y 5/4), 10% fine sand, 90% fines, non-plastic to low plasticity, stiff, moist. (moderate to strong hydrocarbon odor)
22	160	100%				
24					SP	At 23.5' Poorly Graded Sand, light olive brown (2.5Y 5/6), 100% very fine to fine sand, medium dense, slightly moist.
26		80%			ML	At 25' Clayey Silt, light olive brown (2.5Y 5/6), 5% very fine sand, 95% fines, very stiff to hard, dry. (moderate hydrocarbon odor)
28						At 28' Silt, light yellowish brown (10YR 6/4), 5% very fine sand, 95% fines, non-plastic, non-cohesive, soft, dry.
30		90% CL-GP-				

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Drilling Log

Soil Boring **CL1-GP-05**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		05 (30)				**Sample No. CL1-GP-05 (30)**
		90%				(moderate hydrocarbon odor)
32					ML	
34		85%				At 33' Sandy Silt, light yellowish brown (10YR 6/4), 30% very fine sand, 70% fines, non-plastic, medium stiff, dry.
36					SW	At 36' Well Graded Sand, light yellowish brown (10YR 6/4), 100% very fine to medium sand, (coarsening downward).
					ML	At 37' Clayey Silt with Sand, brownish yellow (10YR 6/8), 20% very fine sand, 80% fines, non-plastic, slightly moist.
38		80%			SM	At 38' Silty Sand, yellow (10YR 7/6), 85% fine sand, 15% fines, loose, dry.
40					SP	At 39' Poorly Graded Sand, light yellowish brown (10YR 6/4), 100% very fine to fine sand, medium dense, dry. **Sample No. CL1-GP-05 (40)**
42		CL1-GP-05 (40) 90%			SM	At 42'-42.5' Silty Sand, 80% very fine to fine sand, 20% fines.
					SP	At 42.5' Poorly Graded Sand, as above.
					SW	At 43' Well Graded Sand, light olive brown (2.5Y 5/4) trace fine gravel, 100% very fine to coarse sand, medium dense, slightly moist.
44						
46		90%			ML	At 43.5' Clayey Silt, light olive brown (2.5Y 5/4) with pale yellow (2.5Y 7/4) mottling, 10% very fine sand, 90% fines, non-plastic, very stiff, slightly moist, very slight hydrocarbon odor. At 45' Silt, light yellowish brown (2.5Y 6/4), 10% very fine sand, 90% fines, non-plastic, soft, slightly moist, no odor.
48					SM	(from 46.5'-48' clayely silt lenses, 100% fines). At 48' Silty Sand, light yellowish brown (2.5Y 6/4), 85% very fine sand, 15% fines, medium dense, slightly moist.
50		85%				At 49.5' Clayey Silt with Sand, light olive brown (2.5Y 5/4), 10-15% very fine sand, 85-90% fines, non-plastic, soft to stiff, moist.
52					ML	
54		95% CL1-GP-05 (55)				(becomes very moist at 55') **Sample No. CL1-GP-05 (55)**
56						Total Depth = 56.0' bgs
58						
60						
62						
64						
66						
68						
70						

Drilling Log

Shaw

Soil Boring **CL1-GP-06**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 56.0 ft. | North: 1971708.9 ft. | East: 6385616.6 ft.
Top of Casing: 144.58 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/7/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					ML	Clayey Silt, dark yellowish brown (10YR 4/6), trace to 5% sand and gravel, approximately 95% fines, non-plastic to low plasticity, very stiff to hard, dry.
2		75%				
4						
6		85%				
8						At 7.5' Sandy Silt, brownish yellow (10YR 6/6), 30% very fine sand, 70% fines, non-plastic, soft to medium stiff, dry.
10		75%				
12					SP SM	(Sandy Silt lenses (50% sand/50% silt) At 11 feet and 11.5 feet, approximately 1 to 2 inches thick.) At 11.5' Sand with Silt, brownish yellow (10YR 6/6), 90% very fine to fine sand, 10% fnes, loose to medium dense, slightly moist.
14		90%			ML	At 14' Clayey Silt, yellowish brown (10YR 5/6), 5% very fine to fine sand, 95% fines, non-plastic, stiff to hard, slightly moist.
16						
18		85%				At 18' Silt, yellowish brown (10YR 5/6), trace sand, approximately 100% fines.
20						
22		75%			SP SM	At 21' Sand with Silt lense, 90% very fine to fine sand, 10% fines.
					ML	At 22' Clayey Silt, yellowish brown (10YR 5/6), 5% very fine to fine sand, 95% fines, non-plastic, stiff to hard, slightly moist.
24						
26		80%				
28						At 28' Sandy Silt, yellowish brown (10YR 5/6), 40% very fine sand, 60% fines, non-plastic, soft, slightly moist.
30		65% CL1-GP-				

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-06**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		06 (30)			ML	**Sample No. CL1-GP-06 (30)**
		65%			SW	Gravelly sand lense at 30.75', 1-2 inches thick. No odor.
32					SM	At 32' Silty Sand, yellowish brown (10YR 5/6), 85% very fine sand, 15% fines, loose, dry.
34		75%			ML	At 33.5' Sandy Silt, yellowish brown (10YR 5/6), 40% very fine sand, 60% fines, non-plastic, medium stiff, slightly moist.
36					SM	At 36' Silty Sand, yellowish brown (10YR 5/6), 85% very fine sand, 15% fines, loose, dry.
38		75%			ML	At 36.5' Sandy Silt, brownish yellow (10YR 6/8), 30% very fine sand, 70% fines, non-plastic, soft, slightly moist.
40						**Sample No. CL1-GP-06 (40)**
42		CL1-GP-06 (40) 75%			SM	At 40.5' Silty Sand, brownish yellow (10YR 6/6), 80% very fine to fine sand, 20% fines, medium dense, slightly moist.
44						
46		75%			SW	At 45.5' Sand becomes well graded with some subrounded gravel (up to 4mm in size).
48					ML	At 46' Clayey Silt, brownish yellow (10YR 6/8), 5% very fine sand, 95% fines, non-plastic, soft, moist. At 47' Sandy Silt, brownish yellow (10YR 6/8), 40% very fine sand, 60% fines.
50		40%			SM	(50'-50.5' silt sand lense)
					ML	
52					CL	At 51' Clay with Silt, dark yellowish brown (10YR 4/6), 100% fines, medium to high plasticity, very stiff, moist.
54		100% CL1-GP-06 (55)			ML	At 53' Sandy Silt, yellowish brown (10YR 5/8), 30% very fine sand, 70% fines, non-plastic, medium stiff, very moist.
56						**Sample No. CL1-GP-06 (55) (along with field duplicate)** (note: no odors in soil for this boring)
58						Total Depth = 56.0' bgs
60						
62						
64						
66						
68						
70						

Drilling Log

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Soil Boring **CL1-GP-07**

Project	Crows Landing	Owner	U.S. Navy				
Location	Cluster 1			Proj. No.	836557		
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North	1971672.23 ft.	East	6385612.9 ft.
Top of Casing	144.37 ft.	Water Level Initial	NA	Static	NA	Diameter	2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA		
Casing: Dia	NA	Length	NA	Type	NA		
Fill Material	Grout			Rig/Core	AMS Power Probe		
Drill Co.	RSI	Method	Direct Push				
Driller	NA	Log By	Joe Strack	Date	4/7/04	Permit #	NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941				

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					CL	Fill (composed of Silty Clay), dark yellowish brown (10YR 4/6), 2% gravel (up to 1mm in size), 8% sand, 90% fines, low plasticity, very stiff to hard, dry.
2		65%				
4						
6		85%				
8					ML	At 7' Fill (composed of Silt with Sand), yellowish brown (10YR 5/6), 15% sand, 85% fines, non-plastic, very stiff, dry.
10		75%			GM	At 10' Fill (composed of Gravel with Silt, Clay, and Sand) 65% rounded to angular gravel (up to 1.5-inches in size), 5% sand, 30% fines, loose, dry.
12						
14		50%				(fines increase to 45%)
16						
18		25%				(4mm size pea gravel at bottom of fill, located at approximately 20' bgs)
20					SM	At 20' Silty Sand, yellow (10YR 7/8), 70% very fine sand, 30% fines, non-plastic, stiff, dry. (moderate to strong hydrocarbon odor)
22		70%				
24	204					
26		20%				
28					ML	At 28' Sandy Silt, yellow (10YR 7/8), 40-50% very fine sand, 50-60% fines, moderate hydrocarbon odor.
30		65% CL1-GP-				

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Drilling Log

Soil Boring **CL1-GP-07**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		07 (30) 65%			ML	**Sample No. CL1-GP-07 (30) (sample depth 29.5'-30.5')** At 30' Sandy Silt, yellow (10YR 7/8), 40-50% very fine sand, 50-60% fines, moderate hydrocarbon odor.
32						
34		80%				
36						
38		75%			SM	At 38' Silty Sand, olive yellow (10YR 6/6), 50% very fine sand, 50% fines, dense, dry, moderate hydrocarbon odor.
40						**Sample No. CL1-GP-07 (40)** At 40' Silty Sand, light olive brown (2.5Y 5/4), 80% very fine to fine sand, 20% fines, loose, slightly moist, (very slight hydrocarbon odor).
42	47	CL1-GP-07 (40) 75%				
44						(some angular gravel up to 5mm in size near 45' bgs)
46		80%			ML	At 45' Sandy Silt, light yellowish brown (10YR 6/4), 30% very fine sand, 70% fines, non-plastic, medium stiff, slightly moist. (no to very slight hydrocarbon odor)
48					SM	At 47.5' Silty Sand, brownish yellow (10YR 6/8), 85% very fine sand, 15% fines, loose, slightly moist. (no hydrocarbon odor)
50		85%			ML	At 49.5' Sandy Silt with Clay, brownish yellow (10YR 6/8), 25% very fine sand, 75% fines, very stiff to hard, slightly moist.
52					SM	At 51' Silty Sand with Clay, dark yellowish brown (10YR 4/6), 50% very fine sand, 50% fines, slightly cohesive, stiff, slightly moist.
54		90% CL1-GP-07 (55)			ML	At 52.5' Silt, light olive brown (2.5Y 5/6), 10% very fine sand, 90% fines, non-plastic, medium stiff, moist.
56						**Sample No. CL1-GP-07 (55)** At 55.5' Clayey Silt, light olive brown (2.5Y 5/4), 100% fines, non-plastic, soft, moist.
58						Total Depth = 56.0' bgs
60						
62						
64						
66						
68						
70						

Drilling Log

Shaw

Soil Boring **CL1-GP-08**

Project	Crows Landing	Owner	U.S. Navy				
Location	Cluster 1			Proj. No.	836557		
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North	1971819.3 ft.	East	6385612.9 ft.
Top of Casing	144.44 ft.	Water Level Initial	NA	Static	NA	Diameter	2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA		
Casing: Dia	NA	Length	NA	Type	NA		
Fill Material	Grout			Rig/Core	AMS Power Probe		
Drill Co.	RSI	Method	Direct Push				
Driller	NA	Log By	Joe Strack	Date	4/6/04	Permit #	NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941				

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					ML	Fill including Clay, Silt, and Gravel.
2		65%				At 1' Fill (composed of Clayey Silt) strong brown (7.5YR 4/6), 100% fines, low plasticity, very stiff, dry.
4						
6		75%				
8						
10		75%				(at 9.5' becomes light yellowish brown (2.5Y 6/3) with olive brown mottling (2.5Y 4/3), some very fine sand)
12					SM	At 11' Silty Sand, brownish yellow (10YR 6/8), 80% very fine sand, 20% fines, loose to medium dense, dry.
14		90%				
16						
18		80%			ML	At 16.5' Silt with Sand, yellowish brown (10YR 5/6), 15% very fine sand, 85% fines, non-plastic, soft to medium stiff, slightly moist.
20						
22		75%				(at 21' becomes very stiff with some clay)
24						At 24' Clayey Silt, yellowish brown (10YR 5/6), 100% fines, non-plastic to low plasticity, stiff, slightly moist.
26		90%				
28						At 27' Silt with Sand, brownish yellow (10YR 6/8), 20% very fine sand, 80% fines, non-plastic, medium stiff, dry.
30		80% CL1-GP-			SM	At 28' Silty Sand, light olive brown (2.5Y 5/6), 55% very fine to fine sand, 45% fines, medium dense, dry.

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Drilling Log

Soil Boring **CL1-GP-08**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		08 (30) 80%			SM	**Sample No. CL1-GP-08 (30)** At 30.5' Silty Sand, light olive brown (2.5Y 5/6), 55% very fine to fine sand, 45% fines, medium dense, dry.
32						
34		65%				
36					SW	At 35.5' Gravelly Sand with Silt, light olive brown (2.5Y 5/4), 15% angular gravel (up to 8mm in size), 70% well graded sand, 15% fines, moderate hydrocarbon odor.
	160				ML	At 36.5' Silt, yellowish brown (10YR 5/6), 5% very fine sand, 95% fines, strong hydrocarbon odor.
38		50%			SP	At 37.5' Poorly Graded Sand with Silt, olive yellow (2.5Y 6/8), 90% very fine sand, 10% fines, moderate odor.
	120					**Sample No. CL1-GP-08 (40)**
40					SM	At 40' Silty Sand / Sandy Silt, olive yellow (2.5Y 6/8), 50% very fine sand, 50% fines, soft. (strong hydrocarbon odor)
42		CL1-GP-08 (40) 60%				
44					ML	At 43' Clayey Silt, light olive brown (2.5Y 5/6), 10% very fine sand, 90% fines, very stiff to hard, slightly moist, moderate to strong hydrocarbon odor.
46		90%				At 45' Silt with Sand and Clay, yellowish brown (10YR 5/6), 20% very fine sand, 80% fines, non-plastic, medium stiff, slightly moist.
48						
50		100%				At 49.5' Clayey Silt, light olive brown (2.5Y 5/6), 10% very fine sand, 90% fines, very stiff to hard, slightly moist, moderate to strong hydrocarbon odor.
52						At 52' Silt, light olive brown (2.5Y 5/6), 10% very fine sand, 90% fines, non-plastic, stiff, very moist, moderate hydrocarbon odor.
54		90% CL1-GP-08 (55)				**Sample No. CL1-GP-08 (55)**
56						Total Depth = 56.0' bgs
58						
60						
62						
64						
66						
68						
70						

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Drilling Log

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Soil Boring **CL1-GP-09**

Project	Crows Landing	Owner	U.S. Navy		
Location	Cluster 1			Proj. No.	836557
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North 1971789.4 ft.	East 6385605 ft.
Top of Casing	144.29 ft.	Water Level Initial	NA	Static NA	Diameter 2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA
Casing: Dia	NA	Length	NA	Type	NA
Fill Material	Grout			Rig/Core	AMS Power Probe
Drill Co.	RSI	Method	Direct Push		
Driller	NA	Log By	Joe Strack	Date 4/6/04	Permit # NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941		

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Fill including Silt and Gravel
2		65%			CL	At 1' Fill (composed of Silty Clay with Sand), dark brown (7.5YR 4/3), 10% very fine sand, 90% fines, non-plastic to low plasticity, hard, dry.
4						
6		90%				
8						
10		75%			ML	At 8.5' Sandy Silt, dark yellowish brown (10YR 4/6), 30% very fine sand, 70% fines, non-plastic, stiff, slightly moist.
12						
14		85%				(at 13' sand content decreases, 10% very fine sand, 90% fines) At 14.5' Sandy Silt, dark yellowish brown (10YR 4/6), 30% very fine sand, 70% fines, non-plastic, stiff, slightly moist.
16					SM	At 16' Silty Sand, yellowish brown (10YR 6/8), 60% very fine sand, 40% fines, medium dense, dry.
18		95%			ML	At 17' Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, non-plastic to low plasticity, stiff, moist.
20						(at 20' trace very fine sand)
22		65%				
24						
26		100%				(at 25'-25.5' approximately 15% very fine sand) (at 27.5' to 27.75' approximately 10% very fine sand)
28					SP	At 28' Poorly Graded Sand with Silt, olive yellow (2.5Y 6/6), 90% very fine to fine sand, 10% fines, medium dense, dry.
30		85% CL1-GP-				

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Drilling Log

Soil Boring **CL1-GP-09**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		09 (30)				**Sample No. CL1-GP-09 (30)**
32		85%			SP	
34		75%			SW	At 33' Gravelly Sand with Silt, light olive brown (2.5Y 5/6), 20% subrounded gravel (up to 1" in size), 70% well graded sand, 10% fines, dense, dry.
36						At 36' Clayey Silt, light olive brown (2.5Y 5/4), 100% fines, non-plastic, slightly moist.
38		90%			ML	At 37' Sandy Silt, brownish yellow (10YR 6/6), 40% very fine sand, 60% fines, non-plastic, soft to medium stiff, slightly moist. (no hydrocarbon odor)
40						**Sample No. CL1-GP-09 (40)**
42		CL1-GP-09 (40) 75%			SM	At 42' Silty Sand, brownish yellow (10YR 6/6), 70% very fine to fine sand, 30% fines, medium dense, slightly moist.
44					ML	At 43' Sandy Silt, brownish yellow (10YR 6/8), 40% very fine sand, 60% fines, non-plastic, slightly moist. (increasing silt content)
46		100%				At 44.5' Silt with Sand, light yellowish brown (10YR 6/4), 10% very fine sand, 90% fines, non-plastic, slightly moist.
48						At 48' Sandy Silt, brownish yellow (10YR 6/6), 40% very fine sand, 60% fines, non-plastic, slightly moist.
50		95%				At 49.5' Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, non-plastic to low plasticity, slightly moist.
52						At 51' Silt, dark yellowish brown (10YR 4/6), 10% very fine sand, 90% fines, non-plastic, slightly moist.
54		95% CL1-GP-09 (55)				At 53' Silt with Clay, yellowish brown (10YR 4/4), 100% fines, low plasticity, soft, moist.
56						At 54.5' Silt, dark yellowish brown (10YR 4/6), 10% very fine sand, 90% fines, non-plastic, slightly moist. **Sample No. CL1-GP-09 (55)** (note: no hydrocarbon odor in this boring)
58						Total Depth = 56.0' bgs
60						
62						
64						
66						
68						
70						

Drilling Log

Shaw

Soil Boring **CL1-GP-10**

Project: Crows Landing | Owner: U.S. Navy
Location: Cluster 1 | Proj. No.: 836557
Surface Elev.: NA | Total Hole Depth: 56.0 ft. | North: 1971753.2 ft. | East: 6385595.7 ft.
Top of Casing: 144.48 ft. | Water Level Initial: NA | Static: NA | Diameter: 2 in.
Screen: Dia: NA | Length: NA | Type/Size: NA
Casing: Dia: NA | Length: NA | Type: NA
Fill Material: Grout | Rig/Core: AMS Power Probe
Drill Co.: RSI | Method: Direct Push
Driller: NA | Log By: Joe Strack | Date: 4/8/04 | Permit #: NA
Checked By: Tom Barry, R.G. | License No.: R.G. 6941

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0					CL	Fill (composed of Silty Clay with Sand and Gravel) 15% gravel, 20% sand, 65% fines, hard, dry.
2		70%				
4						(at 4' becomes slightly moist, dark yellowish brown (10 YR 4/6))
6		80%				
8					ML	At 8' Sandy Silt, yellowish brown (10YR 5/8), 30% very fine sand, 70% fines, non-plastic, stiff, dry.
10		75%				
12					SM	At 11.5' Silty Sand, yellowish brown (10YR 5/8), 80% very fine sand, 20% fines, medium dense, dry.
14		80%			ML	At 13.5' Sandy Silt with Clay, yellowish brown (10YR 5/6), 30% very fine sand, 70% fines, low to medium plasticity, very stiff, slightly moist.
16						At 16' Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, non-plastic to low plasticity, very stiff, slightly moist.
18		90%				
20					SM	At 20.5' Silty Sand, brownish yellow (10YR 6/6), 85% very fine to fine sand, 15% fines, loose, slightly moist.
22		85%			ML	At 22.5' Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, non-plastic to low plasticity, very stiff, slightly moist.
24						
26		85%				
28					SM	At 27.5' Silty Sand, yellowish brown (10YR 5/6), 70% very fine sand, 30% fines, medium dense, slightly moist.
30		80% CL1-GP-			ML	At 28.5' Clayey Silt, 100% fines, non-plastic, soft.

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Drilling Log

Soil Boring **CL1-GP-10**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		10 (30) 80%			ML	At 30' Clayey Silt, 100% fines, non-plastic, soft. **Sample No. CL1-GP-10 (30)**
32						
34		80%			SM	At 34' Silty Sand, light yellowish brown (10YR 6/4), 80% very fine to fine sand, 20% fines, medium dense, slightly moist.
36						
38		65%			ML	At 38' Clayey Silt, yellowish brown (10YR 5/6), 100% fines, low plasticity, soft, moist.
40					SW	At 39.75' Well Graded Sand with Gravel, 10% subrounded gravel (up to 1/2" in size), 80% well graded sand, 10% fines. **Sample No. CL1-GP-10 (40)**
42		CL1-GP-10 (40) 70%			ML	At 41' Sandy Silt, yellowish brown (10YR 5/6), 30% very fine sand, 70% fines, non-plastic, soft to medium stiff, moist.
44					SM	At 43' Silty Sand, yellowish brown (10YR 6/4), 75% very fine to fine sand, 25% fines. (at 44' trace to 2% angular gravel up to 10mm in size)
46		75%			ML	At 44.5' Silt with Sand, light yellowish brown (10YR 6/4), 15% very fine sand, 85% fines, non-plastic, medium stiff, slightly moist.
48						(at 48.25' to 48.5' Silty Sand lense)
50		100%				At 49' Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, low plasticity, very stiff, slightly moist. (no hydrocarbon odor)
52						At 51' Sandy Silt / Silty Sand, dark yellowish brown (10YR 4/6), 50% very fine sand, 50% fines, low plasticity, soft to medium stiff, moist. (silt content increases to 70% progressively) (at 52' moderate hydrocarbon odor)
54		100% CL1-GP-10 (55)				At 53.5' Silt, yellowish brown (10YR 5/6), 100% fines, non-plastic, soft to stiff, slightly moist (moderate hydrocarbon odor). **Sample No. CL1-GP-10 (55)**
56						Total Depth = 56.0' bgs
58						
60						
62						
64						
66						
68						
70						

IT_COMMERCIAL Rev: 2/23/00 CROWS LANDING CL1-GP.GPJ IT_CORP.GDT 6/15/04

Drilling Log

Shaw

Soil Boring **CL1-GP-11**

Project	Crows Landing	Owner	U.S. Navy		
Location	Cluster 1			Proj. No.	836557
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North 1971723.7 ft.	East 6385578.2 ft.
Top of Casing	144.62 ft.	Water Level Initial	NA	Static NA	Diameter 2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA
Casing: Dia	NA	Length	NA	Type	NA
Fill Material	Grout			Rig/Core	AMS Power Probe
Drill Co.	RSI	Method	Direct Push		
Driller	NA	Log By	Joe Strack / Tracy Fenger	Date 4/7/04	Permit # NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941		

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Fill (composed of Silty Clay), dark yellowish brown (10YR 4/6), trace gravel, 5% very fine sand, 95% fines, low to medium plasticity, medium stiff to stiff, dry.
2		65%				
4						Around 4' Fill, dark yellowish brown (10YR 4/4), 5-10% very fine sand, 90-95% fines.
6		70%			CL	(at 5' white calcite filaments in clay)
8						
10		60%				At 10' Lean Clay with Sand, 10-15% very fine sand, 85-90% fines.
12					SM	At 11' Silty Sand, dark yellowish brown (10YR 4/6), trace gravel and very coarse sand, 60-70% very fine sand, 30-40% fines, loose to medium dense, dry to moist.
14		80%			ML	At 13' Silt, yellowish brown (10YR 5/6), 10% very fine sand, 90% fines, medium stiff, dry.
16						At 15' Silty Clay, dark yellowish brown (10YR 4/6), 5% very fine sand, 95% fines, stiff, dry. (white calcite filaments and mottling)
18		90%			CL	(at 17' becomes soft to medium soft) At 17.5' Silty Clay, dark yellowish brown (10YR 4/4), 5-10% very fine sand, 90-95% fines. At 18' Lean Clay, 5% very fine sand, 95% fines, stiff. (alternating soft to stiff)
20						
22		80%				At 21' Silty Clay, yellowish brown (10YR 5/6), 5% fine sand, 95% fines, medium plasticity, medium stiff to stiff.
					SC	At 22' Clayey Sand, dark yellowish brown (10YR 4/6), 60% very fine to fine sand, 40% fines, medium dense to dense, moist.
24						At 23.5' Silty Clay, as above.
26		90%			CL	At 24' Lean Clay, 0-5% very fine sand, 90-95% fines, stiff, dry, white calcite filaments and mottling to 27'.
28						At 27' Silty Clay, dark yellowish brown (10YR 4/6), 5% very fine sand, 95% fines, medium stiff, dry.
30		80% CL1-GP-			ML	At 27.5' Sandy Silt, yellowish brown (10YR 5/6), 45% very fine sand, 55% fines, soft, dry.

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-11**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		11 (30)			CL	**Sample No. CL1-GP-11 (30) (sample time 15:10)**
		80%				(at 30' fines increase to 60-65%)
32					ML	At 30.5' Silty Clay, dark yellowish brown (10YR 4/6), 100% fines, medium stiff.
						At 31.5' Silt, yellowish brown (10YR 5/6), 100% fines, non-plastic to low plasticity, soft, dry.
34		80%			CL	At 33' Clayey Silt, yellowish brown (10YR 5/6), 100% fines, soft to medium stiff, low plasticity.
						(at 34' grades to Silty Clay, 5% very fine sand, 95% fines, low to medium plasticity, medium stiff)
36					ML	(at 34.5' thin bed (approximately 2" thick) of sandy silt, 45% very fine sand, 55% fines, soft, dry.)
						At 35' Silt, yellowish brown (10YR 5/6), 5% very fine sand, 95% fines, medium stiff, dry.
38		65%			CL	At 35.5' Silt with Sand, 25% very fine sand, 75% fines.
						At 37' Clayey Silt, as above at 33'.
40						At 38' Lean Clay, dark yellowish brown (10YR 4/6), 100% fines, medium plasticity, medium stiff, moist.
42		CL1-GP-11 (40) 80%			SP	**Sample No. CL1-GP-11 (40)**
					CL	At 40.8' sharp contact to Poorly Graded Sand and interbedded clay, yellowish brown (10YR 5/6), 90-95% very fine to fine sand, 5-10% fines, loose, dry.
44					SP	At 42.5' Lean Clay, as above.
						At 43' poorly graded sand.
46		75%			SW	At 43.9' Well Graded Sand with Gravel, 15% pea-sized gravel, 60% very fine to coarse sand, 15% fines, loose, dry.
						(at 46' as above, with fine gravel and coarse angular sand)
48					CL ML	(at 46.5' oxidized gravel-sand mixture, thin bed of light gray sand cemented by a fine material (ash?) located below oxidized bed)
					ML	At 47' sharp contact to Silty Clay, yellowish brown (10YR 5/6), 100% fines, grades to Silt then back to Silty Clay, yellowish brown (10YR 5/6), 5% very fine sand, 95% fines, moist.
50		95%			CL	At 48.5' Silt, yellowish brown (10YR 5/4) 10% very fine sand, 90% fines, non-plastic, soft, moist.
52					ML	At 49.5' Silty Clay, dark yellowish brown (10YR 4/6), 100% fines, low to medium plasticity, very stiff, moist.
					SM	At 51' Clayey Silt, dark yellowish brown (10YR 4/6), trace very fine sand, 100% fines, stiff, moist.
54		90% CL1-GP-11 (55)			ML	At 52.5' Silty Sand, light olive brown (2.5Y 5/6), 75% very fine sand, 25% fines, dense, moist.
56						At 53' Clayey Silt with Sand, light olive brown (2.5Y 5/6), 5-10% very fine sand, 90-95% fines, non-plastic, soft to medium stiff, very moist.
						Sample No. CL1-GP-11 (55)
58						
60						
62						
64						
66						
68						
70						

Drilling Log

Shaw

Soil Boring **CL1-GP-12**

Project	Crows Landing	Owner	U.S. Navy		
Location	Cluster 1			Proj. No.	836557
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North 1971802.9 ft.	East 6385573.9 ft.
Top of Casing	144.33 ft.	Water Level Initial	NA	Static NA	Diameter 2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA
Casing: Dia	NA	Length	NA	Type	NA
Fill Material	Grout			Rig/Core	AMS Power Probe
Drill Co.	RSI	Method	Direct Push		
Driller	NA	Log By	Tracy Fenger	Date 4/8/04	Permit # NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941		

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						Fill
2		65%			ML	At 2' Fill (composed of Silt), dark yellowish brown (10YR 4/6), 5% very fine sand, 95% fines, medium stiff to stiff, dry.
					CL	At 3' Fill (composed of Silty Clay), dark yellowish brown (10YR 4/4), 100% fines, stiff, dry.
4					ML	At 4' Fill (composed of Clayey Silt), dark yellowish brown (10YR 4/6), 5% very fine sand, 95% fines.
6		70%			CL	At 5' Fill (composed of Lean Clay), dark yellowish brown (10YR 4/4), stiff, white calcite filaments.
8						At 7.75' 5-10% very fine sand, 90-95% fines, sand content increasing with depth.
10		75%				At 9' Fill (composed of Sandy Clay), yellowish brown (10YR 5/6), 30% very fine sand, 70% fines.
12					SM	At 10.5' Silty Sand, trace gravel, 60-70% very fine sand, 30-40% fines, loose to medium dense, dry. At 11' Silty Sand, 5% pea-size gravel, 80% very fine to fine sand, 15% fines, loose, dry.
14		80%			ML	At 13' Sandy Silt, 60-70% fines, 30-40% very fine sand, cohesive, soft, dry. At 14' Silt with Sand, 25% very fine sand, 75% fines, loose. (white filaments and mottling).
16					CL	At 15' Lean Clay with Sand, 15% very fine to fine sand, 85% fines, cohesive, stiff. (reddish staining/oxidation)
18		90%				At 17' Silty Clay, dark yellowish brown (10YR 4/6), 100% fines, medium plasticity, soft to medium stiff, dry. (white mottling)
20						
22		75%			SM	(medium stiff to stiff) By 22' grades to Silty Sand, yellowish brown (10YR 5/6), 80-85% very fine sand, 15-20% fines. At 23' 85% very fine to fine sand, 15% fines.
24					SP	At 24' Poorly Graded Sand with Silt, yellowish brown (10YR 5/6), 90% very fine to fine sand, 10% fines, loose, dry.
26		80%				At 26' Silty Sand, yellowish brown (10YR 5/6), 65% very fine to fine sand, 35% fines, dense.
					ML	At 26.5', 70-75% very fine sand, 25-30% fines, medium dense, dry to moist.
28					CL	At 27' grades to Sandy Silt, yellowish brown (10YR 5/6), 30-40% very fine sand, 60-70% fines, medium stiff to stiff, moist.
		75% CL1-GP-			ML	At 28' Silty Clay, dark yellowish brown (10YR 5/6), 5-10% very fine sand, 90-95% fines,
30						

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-12**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		12 (30)			SM	moist, stiff.
		75%			SP	At 29' Sandy Silt, yellowish brown (10YR 5/6), 30-35% very fine sand, 65-70% fines, non-plastic to low plasticity, soft, dry to moist. **(Sample CL1-GP-12 (30) taken at 15:25)**
32					ML	At 30' Silty Sand, yellowish brown (10YR 5/6), 60-65% very fine sand, 40-45% fines, loose, dry.
34		70%			SP	At 31' Poorly Graded Sand with Silt, trace pea-size gravel, 90% very fine sand, 10% fines.
36					CL	At 31.5' Clayey Silt, dark yellowish brown (10YR 4/6), 5-10% very fine sand, 90-95% fines, stiff, moist.
						At 33' Sandy Silt, 30% very fine sand, 70% fines, loose, moist.
38		25%			SM	At 34' Poorly Graded Sand with Silt and Gravel, 15% gravel, 75% poorly graded, very fine to fine sand, 10% fines, loose, moist. (increases to fine to medium sand, small 2" thick clay bed at 34.5')
40					ML	(Interbedded Clay and Sand with Silt and Gravel - 1"-2" thick beds 34.5'-36') (at 35' oxidation staining - reddish)
						near 36' Lean Clay
42		CL1-GP-12 (40) 80%			SM	At 37' Silty Sand, yellowish brown (10YR 5/4), 60% very fine sand, 40% fines, loose, dry.
					ML	At 39' Silt, dark yellowish brown (10YR 4/6), 100% fines, medium stiff to stiff, moist. (sharp contact) **Sample No. CL1-GP-12 (40)**
44					CL	At 41' Silty Sand, light olive brown (2.5Y 5/4), 75-80% very fine sand, 20-25% fines, loose, moist. (fining downward)
46		90%				At 42.75' Silty Clay, 5% very fine to fine sand, 95% fines, stiff, moist.
						At 43' Lean Clay with Sand, dark yellowish brown (10YR 4/6), trace gravel (angular, up to 1/2" diameter), 20-25% very fine to fine sand, 75-80% fines, medium stiff to stiff, moist.
48					ML	
					CL	At 44' Silty Clay, light olive brown (2.5Y 5/4), 10% very fine sand, 90% fines, medium stiff, dry to moist.
					ML	
50		95%			CL	At 45.5' Silty Clay, 100% fines, stiff.
						Grades to Sandy Silt, 25% very fine sand, 75% fines.
52					ML	At 48' Sandy Silt, as above.
						At 49' Silty Clay, as above, stiff to very stiff
						(at 50.5' medium stiff)
54		95% CL1-GP-12 (55)			SP	At 51' Sandy Silt, dark yellowish brown (10YR 4/6), 35% very fine sand, 65% fines, soft, moist.
						(at 52.5' more cohesive)
					CL ML	At 53' Clayey Silt, dark yellowish brown (10YR 4/6), 5% very fine sand, 95% fines, medium stiff, moist.
56						(at 53.5' Poorly Graded Sand bed 3" thick, moist to wet)
58						At 54.5' Silty Clay/Clayey Silt, dark yellowish brown (10YR 4/6), 100% fines, low to medium plasticity, medium stiff, wet. **Sample CL1-GP-12 (55) taken at 16:00** (light olive brown (2.5Y 5/6) near 55.5' to 56.0')
60						Total Depth = 56.0' bgs
62						
64						
66						
68						
70						

Drilling Log

Soil Boring **CL1-GP-13**

Project	Crows Landing	Owner	U.S. Navy				
Location	Cluster 1			Proj. No.	836557		
Surface Elev.	NA	Total Hole Depth	56.0 ft.	North	1971763.3 ft.	East	6385543.8 ft.
Top of Casing	144.24 ft.	Water Level Initial	NA	Static	NA	Diameter	2 in.
Screen: Dia	NA	Length	NA	Type/Size	NA		
Casing: Dia	NA	Length	NA	Type	NA		
Fill Material	Grout			Rig/Core	AMS Power Probe		
Drill Co.	RSI	Method	Direct Push				
Driller	NA	Log By	Joe Strack	Date	4/8/04	Permit #	NA
Checked By	Tom Barry, R.G.	License No.	R.G. 6941				

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
0						
2		50%			CL	Fill (composed of Silty Clay), dark yellowish brown (10YR 3/6), trace sand and gravel, 100% fines, low plasticity, hard, dry.
4						(very poor core recovery from 4' to 8')
6		5%				
8						At 7' Fill (composed of Silty Clay), brownish yellow (10YR 6/6), 100% fines, non-plastic to low plasticity, hard, dry.
10		45%				
12					SM	At 11.5' Silty Sand, yellowish brown (10YR 5/6), 80% very fine sand, 20% fines, loose to medium dense, slightly moist.
14		35%				
					SC	At 15' Clayey Sand, 50% very fine sand, 50% cohesive fines, dense.
16					SP	At 15.5' Poorly Graded Sand with Silt, yellowish brown (10YR 5/6), 90% very fine to fine sand, 10% fines, loose, dry.
18		45%			ML	At 18' Clayey Silt, light olive brown (2.5YR 5/4), trace sand, 100% fines, low plasticity, very stiff, slightly moist.
20						At 19' Sandy Silt, light olive brown (2.5Y 5/4), 30% sand, 70% fines, non-plastic to low plasticity, cohesive, stiff, slightly moist.
22		85%			SM	At 22' Silty Sand, olive yellow (2.5YR 6/6), 60% very fine to fine sand, 40% fines, medium dense, slightly moist.
24					SP SM	At 24' Poorly Graded Sand with Silt, light yellowish brown (2.5Y 6/4), 90% fine to medium sand, 10% fines, dense, dry.
26		75%			SW	(from 26' to 26.5' well graded sand with gravel lense, subrounded gravel up to 8mm in size)
28					SP SM	Poorly Graded Sand with Silt as above.
30		70% CL1-GP-				

Continued Next Page

Drilling Log

Soil Boring **CL1-GP-13**

Project *Crows Landing* Owner *U.S. Navy*

Location *Cluster 1* Proj. No. *836557*

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Soil Descriptions are Based on the USCS.
						Continued
30		13 (30)				**Sample No. CL1-GP-13 (30)**
		70%			SP SM	(at 31' Silt content increases to 10-15%)
32						At 32' Poorly Graded Sand with Silt, light yellowish brown (2.5Y 6/4), 90% fine to medium sand, 10% fines.
					ML	(33.25' to 34' Silt with Clay lense, 100% fines)
34		75%			SP SM	Poorly Graded Sand with Silt as above.
					ML	(silt with sand lense, 20% very fine sand, 80% fines)
36					SP SM	At 35' Poorly Graded Sand with Silt, as above.
38		70%			ML	At 38' Sandy Silt, dark yellowish brown (10YR 4/6), 40% very fine sand, 60% fines, non-plastic, soft to medium stiff, slightly moist.
40					SM	At 39.5' Silty Sand, dark yellowish brown (10YR 4/6), 70% very fine to fine sand, 30% fines, medium dense, slightly moist. **Sample No. CL1-GP-13 (40)**
					SW	(becomes 80% well graded with sub-angular gravel (up to 6mm in size) from 40.75' to 41')
42		CL1-GP-13 (40) 85%				At 41' Silt with Sand, yellowish brown (10YR 5/6), 20% very fine sand, 80% fines, non-plastic, stiff to very stiff, slightly moist. (no hydrocarbon odor in this interval)
44						At 44' Silt with Sand, as above, slight chemical odor.
46	1100	90%				
					ML	
48	1.6					(odor slight to moderate)
						At 48.5' Clayey Silt, light olive brown (2.5Y 5/6), 100% fines, low plasticity, very stiff, slightly moist.
50	33	90%				(moderate chemical odor)
						At 50.5' Sandy Silt, olive yellow (2.5Y 6/6), 30% very fine sand, 70% fines, soft to medium stiff, slightly moist. (slight to moderate chemical odor)
52						
54		95% CL1-GP-13 (55)			SM	At 54' Silty Sand, light olive brown (2.5Y 5/6), 60% very fine sand, 40% fines, loose, slightly moist. (moderate odor)
					ML	**Sample No. CL1-GP-13 (55)** Silt with Clay, light olive brown (2.5Y 5/6), trace sand, 100% fines, non-plastic, slightly moist (moderate odor).
56						Total Depth = 56.0' bgs
58						
60						
62						
64						
66						
68						
70						

IT_COMMERCIAL Rev: 2/23/00 CROWS LANDING CL1-GP.GPJ IT_CORP.GDT 6/15/04

Attachment B
Laboratory Analytical Results

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-01(30')		CL1-GP-01(40')		CL1-GP-01(55')		CL1-GP-02(30')		CL1-GP-02(40')	
Sample Date		04/05/04		04/05/04		04/05/04		04/05/04		04/05/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	14.2		5.7		12.4		12.5		15.5	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	59		11	U	11	U	11	U	12	U
Gasoline Range Organics	mg/kg	0.51	U	0.5	U	0.62	U	0.6	U	0.57	U
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.51	U	0.5	U	0.62	U	0.6	U	0.57	U
Motor Oil Range Organics	mg/kg	12	U	11	U	11	U	11	U	12	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1,1-Trichloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1,2,2-Tetrachloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1,2-Trichloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1-Dichloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1-Dichloroethene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,1-Dichloropropene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2,3-Trichlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2,3-Trichloropropane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2,4-Trichlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2,4-Trimethylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2-Dibromo-3-Chloropropane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2-Dibromoethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2-Dichlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2-Dichloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,2-Dichloropropane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,3,5-Trimethylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,3-Dichlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,3-Dichloropropane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
1,4-Dichlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
2,2-Dichloropropane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
2-Butanone	ug/kg	7	J	120	U	110	U	100	U	130	U
2-Chlorotoluene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
2-Hexanone	ug/kg	58	U	62	U	53	U	50	U	63	U
4-Chlorotoluene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Acetone	ug/kg	23	J	120	U	110	U	100	U	130	U
Benzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Bromobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Bromochloromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Bromodichloromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Bromoform	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Bromomethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Carbon Disulfide	ug/kg	120	UJ	120	UJ	110	UJ	100	UJ	130	UJ
Carbon Tetrachloride	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Chlorobenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Chloroethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Chloroform	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Chloromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Cis-1,2-Dichloroethene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Cis-1,3-Dichloropropene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Cumene	ug/kg	0.8	J	6.2	U	5.3	U	5	U	6.3	U
Dibromochloromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Dibromomethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-01(30')		CL1-GP-01(40')		CL1-GP-01(55')		CL1-GP-02(30')		CL1-GP-02(40')	
Sample Date		04/05/04		04/05/04		04/05/04		04/05/04		04/05/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Ethylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Hexachlorobutadiene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Methyl Isobutyl Ketone	ug/kg	58	U	62	U	53	U	50	U	63	U
Methyl Tert-Butyl Ether	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Methylene Chloride	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Naphthalene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
N-Butylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
N-Propylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
P-Isopropyltoluene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Sec-Butylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Styrene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Tert-Butyl Alcohol	ug/kg	170		25	U	21	U	20	U	25	U
Tert-Butylbenzene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Tetrachloroethene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Toluene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Trans-1,2-Dichloroethene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Trans-1,3-Dichloropropene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Trichloroethene	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Trichlorofluoromethane	ug/kg	5.8	U	6.2	U	5.3	U	5	U	6.3	U
Vinyl Chloride	ug/kg	5.8	UJ	6.2	UJ	5.3	UJ	5	UJ	6.3	UJ
Xylenes(Total)	ug/kg	12	U	12	U	11	U	10	U	13	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Acenaphthene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Acenaphthylene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Anthracene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Benz(A)Anthracene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Benzo(A)Pyrene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Benzo(B)Fluoranthene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Benzo(G,H,I)Perylene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Benzo(K)Fluoranthene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Chrysene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Dibenz(A,H)Anthracene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Fluoranthene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Fluorene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Naphthalene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U
Phenanthrene	ug/kg	4	J	5.3	U	5.7	U	5.7	U	5.9	U
Pyrene	ug/kg	5.8	U	5.3	U	5.7	U	5.7	U	5.9	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-02(55')		CL1-GP-03(30')		CL1-GP-03(40')		CL1-GP-03(55')		CL1-GP-04(30')	
Sample Date		04/05/04		04/07/04		04/07/04		04/07/04		04/05/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	14.4		15.3		15.1		14.7		3	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	9	J	2	J	12	U	12	U	10	U
Gasoline Range Organics	mg/kg	0.5	U	0.56	U	0.61	U	0.59	U	0.52	U
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.5	U	0.56	U	0.61	U	0.59	U	0.52	U
Motor Oil Range Organics	mg/kg	12	U	12	U	12	U	12	U	10	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1,1-Trichloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1,2,2-Tetrachloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1,2-Trichloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1-Dichloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1-Dichloroethene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,1-Dichloropropene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2,3-Trichlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2,3-Trichloropropane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2,4-Trichlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2,4-Trimethylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2-Dibromo-3-Chloropropane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2-Dibromoethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2-Dichlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2-Dichloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,2-Dichloropropane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,3,5-Trimethylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,3-Dichlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,3-Dichloropropane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
1,4-Dichlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
2,2-Dichloropropane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
2-Butanone	ug/kg	110	U	99	U	100	U	96	U	120	U
2-Chlorotoluene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
2-Hexanone	ug/kg	55	U	50	U	50	U	48	U	61	U
4-Chlorotoluene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Acetone	ug/kg	110	U	99	U	100	U	96	U	120	U
Benzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Bromobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Bromochloromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Bromodichloromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Bromoform	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Bromomethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Carbon Disulfide	ug/kg	110	UJ	99	UJ	100	UJ	96	UJ	120	UJ
Carbon Tetrachloride	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Chlorobenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Chloroethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Chloroform	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Chloromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Cis-1,2-Dichloroethene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Cis-1,3-Dichloropropene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Cumene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Dibromochloromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Dibromomethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-02(55')		CL1-GP-03(30')		CL1-GP-03(40')		CL1-GP-03(55')		CL1-GP-04(30')	
Sample Date		04/05/04		04/07/04		04/07/04		04/07/04		04/05/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Ethylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Hexachlorobutadiene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Methyl Isobutyl Ketone	ug/kg	55	U	50	U	50	U	48	U	61	U
Methyl Tert-Butyl Ether	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Methylene Chloride	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Naphthalene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
N-Butylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
N-Propylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
P-Isopropyltoluene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Sec-Butylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Styrene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Tert-Butyl Alcohol	ug/kg	180		20	U	20	U	19	U	24	U
Tert-Butylbenzene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Tetrachloroethene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Toluene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Trans-1,2-Dichloroethene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Trans-1,3-Dichloropropene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Trichloroethene	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Trichlorofluoromethane	ug/kg	5.5	U	5	U	5	U	4.8	U	6.1	U
Vinyl Chloride	ug/kg	5.5	UJ	5	UJ	5	UJ	4.8	UJ	6.1	UJ
Xylenes(Total)	ug/kg	11	U	9.9	U	10	U	9.6	U	12	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Acenaphthene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Acenaphthylene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Anthracene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Benz(A)Anthracene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Benzo(A)Pyrene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Benzo(B)Fluoranthene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Benzo(G,H,I)Perylene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Benzo(K)Fluoranthene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Chrysene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Dibenz(A,H)Anthracene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Fluoranthene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Fluorene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Naphthalene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Phenanthrene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U
Pyrene	ug/kg	5.8	U	5.9	U	5.9	U	5.9	U	5.2	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-04(40')		CL1-GP-04(55')		CL1-GP-05(30')		CL1-GP-05(40')		CL1-GP-05(55')	
Sample Date		04/05/04		04/05/04		04/06/04		04/06/04		04/06/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	10		15		13.6		3.2		15.7	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	250		430		12000		10	U	10	J
Gasoline Range Organics	mg/kg	0.56	U	2.5		130		0.56	U	0.4	J
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.56	U	0.53	U	29	U	0.56	U	0.73	U
Motor Oil Range Organics	mg/kg	56	U	59	U	1200	U	1	J	1	J
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1,1-Trichloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1,2,2-Tetrachloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1,2-Trichloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1-Dichloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1-Dichloroethene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,1-Dichloropropene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2,3-Trichlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2,3-Trichloropropane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2,4-Trichlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2,4-Trimethylbenzene	ug/kg	81	J	590	U	10000		5.7	U	6.1	U
1,2-Dibromo-3-Chloropropane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2-Dibromoethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2-Dichlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2-Dichloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,2-Dichloropropane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,3,5-Trimethylbenzene	ug/kg	560	U	590	U	2400		5.7	U	6.1	U
1,3-Dichlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,3-Dichloropropane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
1,4-Dichlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
2,2-Dichloropropane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
2-Butanone	ug/kg	11000	U	12000	U	12000	U	110	U	120	U
2-Chlorotoluene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
2-Hexanone	ug/kg	5600	U	5900	U	5800	U	57	U	61	U
4-Chlorotoluene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Acetone	ug/kg	11000	U	12000	U	12000	U	110	U	120	U
Benzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Bromobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Bromochloromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Bromodichloromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Bromoform	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Bromomethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Carbon Disulfide	ug/kg	11000	U	12000	U	12000	U	110	UJ	120	UJ
Carbon Tetrachloride	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Chlorobenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Chloroethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Chloroform	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Chloromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Cis-1,2-Dichloroethene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Cis-1,3-Dichloropropene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Cumene	ug/kg	560	U	590	U	61	J	5.7	U	6.1	U
Dibromochloromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Dibromomethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-04(40')		CL1-GP-04(55')		CL1-GP-05(30')		CL1-GP-05(40')		CL1-GP-05(55')	
Sample Date		04/05/04		04/05/04		04/06/04		04/06/04		04/06/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Ethylbenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Hexachlorobutadiene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Methyl Isobutyl Ketone	ug/kg	5600	U	5900	U	5800	U	57	U	61	U
Methyl Tert-Butyl Ether	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Methylene Chloride	ug/kg	560	U	590	U	530	J	4	J	3	J
Naphthalene	ug/kg	560	U	590	U	10000		5.7	U	6.1	U
N-Butylbenzene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
N-Propylbenzene	ug/kg	560	U	590	U	150	J	5.7	U	6.1	U
P-Isopropyltoluene	ug/kg	560	U	590	U	3200		5.7	U	6.1	U
Sec-Butylbenzene	ug/kg	560	U	590	U	2400		5.7	U	6.1	U
Styrene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Tert-Butyl Alcohol	ug/kg	2200	U	2400	U	2300	U	23	U	722	
Tert-Butylbenzene	ug/kg	560	U	590	U	170	J	5.7	U	6.1	U
Tetrachloroethene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Toluene	ug/kg	99	J	590	U	110	J	5.7	U	6.1	U
Trans-1,2-Dichloroethene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Trans-1,3-Dichloropropene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Trichloroethene	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Trichlorofluoromethane	ug/kg	560	U	590	U	580	U	5.7	U	6.1	U
Vinyl Chloride	ug/kg	560	U	590	U	580	U	5.7	UJ	6.1	UJ
Xylenes(Total)	ug/kg	110	J	1200	U	210	J	11	U	12	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.6	U	5.9	U	10000		5.2	U	2	J
Acenaphthene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Acenaphthylene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Anthracene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Benz(A)Anthracene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Benzo(A)Pyrene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Benzo(B)Fluoranthene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Benzo(G,H,I)Perylene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Benzo(K)Fluoranthene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Chrysene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Dibenz(A,H)Anthracene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Fluoranthene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Fluorene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Naphthalene	ug/kg	5.6	U	5.9	U	6500		5.2	U	5.9	U
Phenanthrene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U
Pyrene	ug/kg	5.6	U	5.9	U	580	U	5.2	U	5.9	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-06(30')		CL1-GP-06(40')		CL1-GP-06(55')		CL1-GP-07(30')		CL1-GP-07(40')	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	13.1		14.6		16.1		10.7		7.2	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	12	U	12	U	12	U	9700		160	
Gasoline Range Organics	mg/kg	0.51	U	0.54	U	0.54	U	280		0.57	U
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.51	U	0.54	U	0.54	U	56	U	0.57	U
Motor Oil Range Organics	mg/kg	12	U	12	U	12	U	1100	U	11	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1,1-Trichloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1,2,2-Tetrachloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1,2-Trichloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1-Dichloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1-Dichloroethene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,1-Dichloropropene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2,3-Trichlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2,3-Trichloropropane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2,4-Trichlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2,4-Trimethylbenzene	ug/kg	4.5	U	5	U	5.6	U	46000		6.9	U
1,2-Dibromo-3-Chloropropane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2-Dibromoethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2-Dichlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2-Dichloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,2-Dichloropropane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,3,5-Trimethylbenzene	ug/kg	4.5	U	5	U	5.6	U	16000		6.9	U
1,3-Dichlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,3-Dichloropropane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
1,4-Dichlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
2,2-Dichloropropane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
2-Butanone	ug/kg	90	U	100	U	110	U	56000	U	140	U
2-Chlorotoluene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
2-Hexanone	ug/kg	45	U	50	U	56	U	28000	U	69	U
4-Chlorotoluene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Acetone	ug/kg	90	U	100	U	110	U	56000	U	140	U
Benzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Bromobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Bromochloromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Bromodichloromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Bromoform	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Bromomethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Carbon Disulfide	ug/kg	90	UJ	100	UJ	110	UJ	56000	U	140	UJ
Carbon Tetrachloride	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Chlorobenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Chloroethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Chloroform	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Chloromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Cis-1,2-Dichloroethene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Cis-1,3-Dichloropropene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Cumene	ug/kg	4.5	U	5	U	5.6	U	6000		6.9	U
Dibromochloromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Dibromomethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-06(30')		CL1-GP-06(40')		CL1-GP-06(55')		CL1-GP-07(30')		CL1-GP-07(40')	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Ethylbenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Hexachlorobutadiene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Methyl Isobutyl Ketone	ug/kg	45	U	50	U	56	U	28000	U	69	U
Methyl Tert-Butyl Ether	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Methylene Chloride	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Naphthalene	ug/kg	4.5	U	5	U	5.6	U	16000		6.9	U
N-Butylbenzene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
N-Propylbenzene	ug/kg	4.5	U	5	U	5.6	U	4000		6.9	U
P-Isopropyltoluene	ug/kg	4.5	U	5	U	5.6	U	6000		6.9	U
Sec-Butylbenzene	ug/kg	4.5	U	5	U	5.6	U	6900		6.9	U
Styrene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Tert-Butyl Alcohol	ug/kg	18	U	20	U	22	U	11000	U	28	U
Tert-Butylbenzene	ug/kg	4.5	U	5	U	5.6	U	570	J	6.9	U
Tetrachloroethene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Toluene	ug/kg	4.5	U	5	U	5.6	U	390	J	6.9	U
Trans-1,2-Dichloroethene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Trans-1,3-Dichloropropene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Trichloroethene	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Trichlorofluoromethane	ug/kg	4.5	U	5	U	5.6	U	2800	U	6.9	U
Vinyl Chloride	ug/kg	4.5	UJ	5	UJ	5.6	UJ	2800	U	6.9	UJ
Xylenes(Total)	ug/kg	9	U	10	U	11	U	2900	J	14	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.8	U	5.9	U	6	U	15300		473	
Acenaphthene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Acenaphthylene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Anthracene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Benz(A)Anthracene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Benzo(A)Pyrene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Benzo(B)Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Benzo(G,H,I)Perylene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Benzo(K)Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Chrysene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Dibenz(A,H)Anthracene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Fluorene	ug/kg	5.8	U	5.9	U	6	U	220	U	48	
Indeno(1,2,3-CD)Pyrene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U
Naphthalene	ug/kg	5.8	U	5.9	U	6	U	8650		92	
Phenanthrene	ug/kg	5.8	U	5.9	U	6	U	220	U	10	J
Pyrene	ug/kg	5.8	U	5.9	U	6	U	220	U	22	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-07(55')		CL1-GP-08(30')		CL1-GP-08(40')		CL1-GP-08(55')		CL1-GP-09(30')	
Sample Date		04/07/04		04/06/04		04/06/04		04/06/04		04/06/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	13.1		15.3		13.1		15.9		3.8	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	2	J	12	U	5400		680		10	U
Gasoline Range Organics	mg/kg	0.55	U	0.73	U	150		30		0.56	U
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.55	U	0.73	U	29	U	30	U	0.56	U
Motor Oil Range Organics	mg/kg	12	U	1	J	1200	U	120	U	10	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1,1-Trichloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1,2,2-Tetrachloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1,2-Trichloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1-Dichloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1-Dichloroethene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,1-Dichloropropene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2,3-Trichlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2,3-Trichloropropane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2,4-Trichlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2,4-Trimethylbenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2-Dibromo-3-Chloropropane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2-Dibromoethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2-Dichlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2-Dichloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,2-Dichloropropane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,3,5-Trimethylbenzene	ug/kg	5.3	U	5.4	U	180	J	5.8	U	6.9	U
1,3-Dichlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,3-Dichloropropane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
1,4-Dichlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
2,2-Dichloropropane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
2-Butanone	ug/kg	110	U	110	U	12000	U	120	U	140	U
2-Chlorotoluene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
2-Hexanone	ug/kg	53	U	54	U	5800	U	58	U	69	U
4-Chlorotoluene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Acetone	ug/kg	110	U	110	U	12000	U	20	J	140	U
Benzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Bromobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Bromochloromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Bromodichloromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Bromoform	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Bromomethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Carbon Disulfide	ug/kg	110	UJ	110	UJ	12000	U	5	J	140	UJ
Carbon Tetrachloride	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Chlorobenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Chloroethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Chloroform	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Chloromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Cis-1,2-Dichloroethene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Cis-1,3-Dichloropropene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Cumene	ug/kg	3	J	5.4	U	580	U	5.8	U	6.9	U
Dibromochloromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Dibromomethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-07(55')		CL1-GP-08(30')		CL1-GP-08(40')		CL1-GP-08(55')		CL1-GP-09(30')	
Sample Date		04/07/04		04/06/04		04/06/04		04/06/04		04/06/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Ethylbenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Hexachlorobutadiene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Methyl Isobutyl Ketone	ug/kg	53	U	54	U	5800	U	58	U	69	U
Methyl Tert-Butyl Ether	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Methylene Chloride	ug/kg	5.3	U	3	J	450	J	3	J	4	J
Naphthalene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
N-Butylbenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
N-Propylbenzene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
P-Isopropyltoluene	ug/kg	5.3	U	5.4	U	2100		5.8	U	6.9	U
Sec-Butylbenzene	ug/kg	5.3	U	5.4	U	1300		5.8	U	6.9	U
Styrene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Tert-Butyl Alcohol	ug/kg	54		21	U	2300	U	93		27	U
Tert-Butylbenzene	ug/kg	5.3	U	5.4	U	72	J	5.8	U	6.9	U
Tetrachloroethene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Toluene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	0.9	J
Trans-1,2-Dichloroethene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Trans-1,3-Dichloropropene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Trichloroethene	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Trichlorofluoromethane	ug/kg	5.3	U	5.4	U	580	U	5.8	U	6.9	U
Vinyl Chloride	ug/kg	5.3	UJ	5.4	UJ	580	U	5.8	UJ	6.9	UJ
Xylenes(Total)	ug/kg	11	U	11	U	1200	U	12	U	14	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.8	U	20		2000		59	UJ	5.2	U
Acenaphthene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Acenaphthylene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Anthracene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Benz(A)Anthracene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Benzo(A)Pyrene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Benzo(B)Fluoranthene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Benzo(G,H,I)Perylene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Benzo(K)Fluoranthene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Chrysene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Dibenz(A,H)Anthracene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Fluoranthene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Fluorene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Naphthalene	ug/kg	5.8	U	25		1000		59	UJ	5.2	U
Phenanthrene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U
Pyrene	ug/kg	5.8	U	5.9	U	580	U	59	UJ	5.2	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-09(40')		CL1-GP-09(55')		CL1-GP-10(30')		CL1-GP-10(40')		CL1-GP-10(55')	
Sample Date		04/06/04		04/06/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	12.2		16.6		11.3		13.3		13.8	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	310		79		11	U	12	U	620	
Gasoline Range Organics	mg/kg	0.52	U	21	J	0.47	U	0.58	U	110	
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.52	U	30	U	0.47	U	0.58	U	29	U
Motor Oil Range Organics	mg/kg	57	U	12	U	11	U	12	U	120	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1,1-Trichloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1,2,2-Tetrachloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1,2-Trichloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1-Dichloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1-Dichloroethene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,1-Dichloropropene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2,3-Trichlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2,3-Trichloropropane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2,4-Trichlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2,4-Trimethylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	900	
1,2-Dibromo-3-Chloropropane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2-Dibromoethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2-Dichlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2-Dichloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,2-Dichloropropane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,3,5-Trimethylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	340	J
1,3-Dichlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,3-Dichloropropane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
1,4-Dichlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
2,2-Dichloropropane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
2-Butanone	ug/kg	110	U	12000	U	99	U	120	U	12000	U
2-Chlorotoluene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
2-Hexanone	ug/kg	56	U	6000	U	50	U	58	U	5800	U
4-Chlorotoluene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Acetone	ug/kg	110	U	12000	U	99	U	120	U	2100	J
Benzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Bromobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Bromochloromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Bromodichloromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Bromoform	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Bromomethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Carbon Disulfide	ug/kg	110	UJ	12000	U	99	UJ	120	UJ	12000	U
Carbon Tetrachloride	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Chlorobenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Chloroethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Chloroform	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Chloromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Cis-1,2-Dichloroethene	ug/kg	5.6	U	600	U	5	U	5.8	U	77	J
Cis-1,3-Dichloropropene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Cumene	ug/kg	5.6	U	600	U	5	U	5.8	U	210	J
Dibromochloromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Dibromomethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-09(40')		CL1-GP-09(55')		CL1-GP-10(30')		CL1-GP-10(40')		CL1-GP-10(55')	
Sample Date		04/06/04		04/06/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Ethylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Hexachlorobutadiene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Methyl Isobutyl Ketone	ug/kg	56	U	6000	U	50	U	58	U	5800	U
Methyl Tert-Butyl Ether	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Methylene Chloride	ug/kg	3	J	530	J	5	U	5.8	U	580	U
Naphthalene	ug/kg	5.6	U	600	U	5	U	5.8	U	1500	
N-Butylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
N-Propylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
P-Isopropyltoluene	ug/kg	5.6	U	600	U	5	U	5.8	U	250	J
Sec-Butylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	530	J
Styrene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Tert-Butyl Alcohol	ug/kg	23	U	2400	U	20	U	23	U	2300	U
Tert-Butylbenzene	ug/kg	5.6	U	600	U	5	U	5.8	U	900	
Tetrachloroethene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Toluene	ug/kg	5.6	U	600	U	5	U	5.8	U	61	J
Trans-1,2-Dichloroethene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Trans-1,3-Dichloropropene	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Trichloroethene	ug/kg	5.6	U	600	U	5	U	5.8	U	180	J
Trichlorofluoromethane	ug/kg	5.6	U	600	U	5	U	5.8	U	580	U
Vinyl Chloride	ug/kg	5.6	UJ	600	U	5	U	5.8	U	580	U
Xylenes(Total)	ug/kg	11	U	1200	U	9.9	U	12	U	1200	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	8		60	U	5.6	U	5.8	U	1430	
Acenaphthene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Acenaphthylene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Anthracene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Benz(A)Anthracene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Benzo(A)Pyrene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Benzo(B)Fluoranthene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Benzo(G,H,I)Perylene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Benzo(K)Fluoranthene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Chrysene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Dibenz(A,H)Anthracene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Fluoranthene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Fluorene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Naphthalene	ug/kg	7		60	U	5.6	U	5.8	U	860	
Phenanthrene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U
Pyrene	ug/kg	5.7	U	60	U	5.6	U	5.8	U	58	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-11(30')		CL1-GP-11(40')		CL1-GP-11(55')		CL1-GP-12(30')		CL1-GP-12(40')	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	13.5		15.6		16.4		10.5		9.4	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	12	U	3	J	7	J	11	U	11	U
Gasoline Range Organics	mg/kg	0.52	U	0.52	U	0.2	J	0.56	U	0.55	U
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.52	U	0.52	U	0.62	U	0.56	U	0.55	U
Motor Oil Range Organics	mg/kg	12	U	12	U	12	U	11	U	11	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1,1-Trichloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1,2,2-Tetrachloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1,2-Trichloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1-Dichloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1-Dichloroethene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,1-Dichloropropene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2,3-Trichlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2,3-Trichloropropane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2,4-Trichlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2,4-Trimethylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2-Dibromo-3-Chloropropane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2-Dibromoethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2-Dichlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2-Dichloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,2-Dichloropropane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,3,5-Trimethylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,3-Dichlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,3-Dichloropropane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
1,4-Dichlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
2,2-Dichloropropane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
2-Butanone	ug/kg	90	U	110	U	130	U	120	U	110	U
2-Chlorotoluene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
2-Hexanone	ug/kg	45	U	55	U	66	U	60	U	57	U
4-Chlorotoluene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Acetone	ug/kg	90	U	110	U	130	U	120	U	110	U
Benzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Bromobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Bromochloromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Bromodichloromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Bromoform	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Bromomethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Carbon Disulfide	ug/kg	90	UJ	110	UJ	130	UJ	120	UJ	110	UJ
Carbon Tetrachloride	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Chlorobenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Chloroethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Chloroform	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Chloromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Cis-1,2-Dichloroethene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Cis-1,3-Dichloropropene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Cumene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Dibromochloromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Dibromomethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-11(30')		CL1-GP-11(40')		CL1-GP-11(55')		CL1-GP-12(30')		CL1-GP-12(40')	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Ethylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Hexachlorobutadiene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Methyl Isobutyl Ketone	ug/kg	45	U	55	U	66	U	60	U	57	U
Methyl Tert-Butyl Ether	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Methylene Chloride	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Naphthalene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
N-Butylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
N-Propylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
P-Isopropyltoluene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Sec-Butylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Styrene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Tert-Butyl Alcohol	ug/kg	18	U	22	U	55		24	U	23	U
Tert-Butylbenzene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Tetrachloroethene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Toluene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Trans-1,2-Dichloroethene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Trans-1,3-Dichloropropene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Trichloroethene	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Trichlorofluoromethane	ug/kg	4.5	U	5.5	U	6.6	U	6	U	5.7	U
Vinyl Chloride	ug/kg	4.5	UJ	5.5	UJ	6.6	U	6	U	5.7	U
Xylenes(Total)	ug/kg	9	U	11	U	13	U	12	U	11	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Acenaphthene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Acenaphthylene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Anthracene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Benz(A)Anthracene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Benzo(A)Pyrene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Benzo(B)Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Benzo(G,H,I)Perylene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Benzo(K)Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Chrysene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Dibenz(A,H)Anthracene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Fluoranthene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Fluorene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Indeno(1,2,3-CD)Pyrene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Naphthalene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Phenanthrene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U
Pyrene	ug/kg	5.8	U	5.9	U	6	U	5.6	U	5.5	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-12(55')		CL1-GP-13(30')		CL1-GP-13(40')		CL1-GP-13(55')		CL-99-82	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
General Chemistry (ASTM D2216)											
Percent Moisture	%	19.4		2.9		9.4		7.1		14.2	
Total Petroleum Hydrocarbons (EPA 8015B)											
Diesel Range Organics	mg/kg	12	U	10	U	11	U	590		12	U
Gasoline Range Organics	mg/kg	0.81	U	0.57	U	0.57	U	2		0.52	J
JP-4 (Jet Propulsion Fuel #4)	mg/kg	0.81	U	0.57	U	0.57	U	0.49	U	0.52	U
Motor Oil Range Organics	mg/kg	12	U	10	U	11	U	110	U	12	U
Volatile Organic Compounds (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1,1-Trichloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1,2,2-Tetrachloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1,2-Trichloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1-Dichloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1-Dichloroethene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,1-Dichloropropene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2,3-Trichlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2,3-Trichloropropane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2,4-Trichlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2,4-Trimethylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	110	J	5.5	U
1,2-Dibromo-3-Chloropropane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2-Dibromoethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2-Dichlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2-Dichloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,2-Dichloropropane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,3,5-Trimethylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,3-Dichlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,3-Dichloropropane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
1,4-Dichlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
2,2-Dichloropropane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
2-Butanone	ug/kg	160	U	130	U	100	U	11000	U	110	U
2-Chlorotoluene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
2-Hexanone	ug/kg	82	U	63	U	51	U	5400	U	55	U
4-Chlorotoluene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Acetone	ug/kg	160	U	130	U	100	U	11000	U	110	U
Benzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Bromobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Bromochloromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Bromodichloromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Bromoform	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Bromomethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Carbon Disulfide	ug/kg	160	UJ	130	UJ	100	UJ	11000	U	110	UJ
Carbon Tetrachloride	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Chlorobenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Chloroethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Chloroform	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Chloromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Cis-1,2-Dichloroethene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Cis-1,3-Dichloropropene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Cumene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Dibromochloromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Dibromomethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U

Appendix B: Summary of Analytical Results, UST Cluster 1 Soil Sampling, NASA Crows Landing, April 2004

Sample Number		CL1-GP-12(55')		CL1-GP-13(30')		CL1-GP-13(40')		CL1-GP-13(55')		CL-99-82	
Sample Date		04/07/04		04/07/04		04/07/04		04/07/04		04/07/04	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Volatile Organic Compounds (EPA 8260B)											
Dichlorodifluoromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Ethylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Hexachlorobutadiene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Methyl Isobutyl Ketone	ug/kg	82	U	63	U	51	U	5400	U	55	U
Methyl Tert-Butyl Ether	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Methylene Chloride	ug/kg	8.2	U	6.3	U	5.1	U	540	U	3	J
Naphthalene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
N-Butylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
N-Propylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
P-Isopropyltoluene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Sec-Butylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Styrene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Tert-Butyl Alcohol	ug/kg	33	U	25	U	20	U	2200	U	22	U
Tert-Butylbenzene	ug/kg	8.2	U	6.3	U	5.1	U	54	J	5.5	U
Tetrachloroethene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Toluene	ug/kg	8.2	U	6.3	U	5.1	U	79	J	5.5	U
Trans-1,2-Dichloroethene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Trans-1,3-Dichloropropene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Trichloroethene	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Trichlorofluoromethane	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	U
Vinyl Chloride	ug/kg	8.2	U	6.3	U	5.1	U	540	U	5.5	UJ
Xylenes(Total)	ug/kg	16	U	13	U	10	U	79	J	11	U
Semivolatiles Organic Compounds (EPA 8270-SIM)											
2-Methylnaphthalene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Acenaphthene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Acenaphthylene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Anthracene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Benz(A)Anthracene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Benzo(A)Pyrene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Benzo(B)Fluoranthene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Benzo(G,H,I)Perylene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Benzo(K)Fluoranthene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Chrysene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Dibenz(A,H)Anthracene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Fluoranthene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Fluorene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Indeno(1,2,3-CD)Pyrene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Naphthalene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Phenanthrene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U
Pyrene	ug/kg	6.2	U	5.1	U	5.5	U	54	U	5.8	U

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April 26,2004

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 04-2393 and your project 836557 Crows Landing CTO 86.
Enclosed please find:

(1) Original Final Report.
(2) Original Chain of Custody.
(3) One Original and one compact disc of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CONFORMS
REVIEWER: T.D
DATE: 5-10-04

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-042393
Collected by: P.Deocampo
Collected on: 04/05/04

Received: 04/06/04
Extracted: 04/06/04
Tested: 04/06-08/04
Reported: 04/13/04

Sample Description: Soil from DPT Sampling Cluster 1
Project Description: 836557 Crows Landing-CTO 86

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-01(30') 04-02393-1	CL1-GP-01(40') 04-02393-2	CL1-GP-01(55') 04-02393-3
PERCENT MOISTURE	ASTM-D2216	W%	0.5	14.2	5.7	12.4
Dilution Factor				0.88	0.94	1.08
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.1J	0.03J	0.03J
Dilution Factor				0.88	0.94	1.08
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.51	<0.50	<0.62
Dilution Factor				1	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	59 [a]	<11	<11
Dilution Factor				1	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<12	<11	<11
VOLATILE ORGANICS						
Dilution Factor				0.99	1.17	0.93
ACETONE	SW8260B	µg/kg	100	23J	<120	<110
BENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
BROMOBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
BROMOFORM	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
BROMOMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
2-BUTANONE (MEK)	SW8260B	µg/kg	100	7J	<120	<110
N-BUTYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CARBON DISULFIDE	SW8260B	µg/kg	100	<120	<120	<110
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CHLOROFORM	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CHLOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
DIBROMOMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-01(30') 04-02393-1	CL1-GP-01(40') 04-02393-2	CL1-GP-01(55') 04-02393-3
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
ETHYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
2-HEXANONE	SW8260B	µg/kg	50	<58	<62	<53
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	0.8J	<6.2	<5.3
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	3J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<58	<62	<53
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
NAPHTHALENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
STYRENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TOLUENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.8	<6.2	<5.3
XYLENE (TOTAL)	SW8260B	µg/kg	10	<12	<12	<11
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	170	<25	<21

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-01(30') 04-02393-1	CL1-GP-01(40') 04-02393-2	CL1-GP-01(55') 04-02393-3
PAH						
Dilution Factor				1	1	1
ACENAPHTHENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
CHRYSENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
FLUORENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
NAPHTHALENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7
PHENANTHRENE	8270-SIM	μg/kg	5	4J	<5.3	<5.7
PYRENE	8270-SIM	μg/kg	5	<5.8	<5.3	<5.7

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-02(30') 04-02393-4	CL1-GP-02(40') 04-02393-5	CL1-GP-02(55') 04-02393-6
PERCENT MOISTURE	ASTM-D2216	W%	0.5	12.5	15.5	14.4
Dilution Factor				1.05	0.97	0.86
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.03J	0.03J	0.09J
Dilution Factor				1.05	0.97	0.86
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.60	<0.57	<0.50
Dilution Factor				1	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<11	<12	9J
Dilution Factor				1	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<11	<12	<12

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-02(30') 04-02393-4	CL1-GP-02(40') 04-02393-5	CL1-GP-02(55') 04-02393-6
VOLATILE ORGANICS						
Dilution Factor				0.88	1.07	0.94
ACETONE	SW8260B	µg/kg	100	<100	<130	<110
BENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
BROMOBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
BROMOFORM	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
BROMOMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<100	<130	<110
N-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CARBON DISULFIDE	SW8260B	µg/kg	100	<100	<130	<110
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CHLOROFORM	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
DIBROMOMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
ETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
2-HEXANONE	SW8260B	µg/kg	50	<50	<63	<55

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-02(30') 04-02393-4	CL1-GP-02(40') 04-02393-5	CL1-GP-02(55') 04-02393-6
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	4J	4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<50	<63	<55
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
NAPHTHALENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
STYRENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TOLUENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.0	<6.3	<5.5
XYLENE (TOTAL)	SW8260B	µg/kg	10	<10	<13	<11
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<20	<25	180
PAH						
Dilution Factor				1	1	1
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
ANTHRACENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
CHRYSENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
FLUORANTHENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
FLUORENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
NAPHTHALENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
PHENANTHRENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8
PYRENE	8270-SIM	µg/kg	5	<5.7	<5.9	<5.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-04(30') 04-02393-7
PERCENT MOISTURE	ASTM-D2216	W%	0.5	3.0
Dilution Factor				1.01
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.02J
Dilution Factor				1.01
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.52
Dilution Factor				1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<10
Dilution Factor				1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<10
VOLATILE ORGANICS				
Dilution Factor				1.18
ACETONE	SW8260B	µg/kg	100	<120
BENZENE	SW8260B	µg/kg	5	<6.1
BROMOBENZENE	SW8260B	µg/kg	5	<6.1
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.1
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.1
BROMOFORM	SW8260B	µg/kg	5	<6.1
BROMOMETHANE	SW8260B	µg/kg	5	<6.1
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<120
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.1
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.1
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.1
CARBON DISULFIDE	SW8260B	µg/kg	100	<120
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.1
CHLOROBENZENE	SW8260B	µg/kg	5	<6.1
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.1
CHLOROETHANE	SW8260B	µg/kg	5	<6.1
CHLOROFORM	SW8260B	µg/kg	5	<6.1
CHLOROMETHANE	SW8260B	µg/kg	5	<6.1
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.1
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.1
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.1
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<6.1
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.1
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.1
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.1
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.1
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.1
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.1
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.1
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.1
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.1
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.1
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.1
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.1
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.1
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.1

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-04(30') 04-02393-7
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.1
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.1
ETHYLBENZENE	SW8260B	µg/kg	5	<6.1
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.1
2-HEXANONE	SW8260B	µg/kg	50	<61
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.1
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.1
METHYLENE CHLORIDE	SW8260B	µg/kg	5	5J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<61
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<6.1
NAPHTHALENE	SW8260B	µg/kg	5	<6.1
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.1
STYRENE	SW8260B	µg/kg	5	<6.1
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.1
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.1
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.1
TOLUENE	SW8260B	µg/kg	5	<6.1
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.1
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.1
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.1
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.1
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.1
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.1
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.1
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.1
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.1
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.1
XYLENE (TOTAL)	SW8260B	µg/kg	10	<12
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<24
PAH				
Dilution Factor				1
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.2
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.2
ANTHRACENE	8270-SIM	µg/kg	5	<5.2
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.2
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.2
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.2
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.2
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.2
CHRYSENE	8270-SIM	µg/kg	5	<5.2
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.2
FLUORANTHENE	8270-SIM	µg/kg	5	<5.2
FLUORENE	8270-SIM	µg/kg	5	<5.2
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.2
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.2
NAPHTHALENE	8270-SIM	µg/kg	5	<5.2
PHENANTHRENE	8270-SIM	µg/kg	5	<5.2
PYRENE	8270-SIM	µg/kg	5	<5.2

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-04(40') 04-02393-8	CL1-GP-04(55') 04-02393-9
PERCENT MOISTURE	ASTM-D2216	W%	0.5	10.0	15.0
Dilution Factor				1	0.9
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.07J	2.5 [b]
Dilution Factor				1	0.9
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.56	<0.53
Dilution Factor				5	5
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	250 [c]	430 [c]
Dilution Factor				5	5
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<56	<59
VOLATILE ORGANICS					
Dilution Factor				100 [d]	100 [d]
ACETONE	SW8260B	µg/kg	100	<11000	<12000
BENZENE	SW8260B	µg/kg	5	<560	<590
BROMOBENZENE	SW8260B	µg/kg	5	<560	<590
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<560	<590
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<560	<590
BROMOFORM	SW8260B	µg/kg	5	<560	<590
BROMOMETHANE	SW8260B	µg/kg	5	<560	<590
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<11000	<12000
N-BUTYLBENZENE	SW8260B	µg/kg	5	<560	<590
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<560	<590
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<560	<590
CARBON DISULFIDE	SW8260B	µg/kg	100	<11000	<12000
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<560	<590
CHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<560	<590
CHLOROETHANE	SW8260B	µg/kg	5	<560	<590
CHLOROFORM	SW8260B	µg/kg	5	<560	<590
CHLOROMETHANE	SW8260B	µg/kg	5	<560	<590
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<560	<590
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<560	<590
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<560	<590
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<560	<590
DIBROMOMETHANE	SW8260B	µg/kg	5	<560	<590
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<560	<590
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<560	<590
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<560	<590
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<560	<590

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-04(40') 04-02393-8	CL1-GP-04(55') 04-02393-9
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<560	<590
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<560	<590
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<560	<590
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<560	<590
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<560	<590
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<560	<590
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<560	<590
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<560	<590
ETHYLBENZENE	SW8260B	µg/kg	5	<560	<590
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<560	<590
2-HEXANONE	SW8260B	µg/kg	50	<5600	<5900
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<560	<590
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<560	<590
METHYLENE CHLORIDE	SW8260B	µg/kg	5	290J	300J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<5600	<5900
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<560	<590
NAPHTHALENE	SW8260B	µg/kg	5	<560	<590
N-PROPYLBENZENE	SW8260B	µg/kg	5	<560	<590
STYRENE	SW8260B	µg/kg	5	<560	<590
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<560	<590
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<560	<590
TETRACHLOROETHENE	SW8260B	µg/kg	5	<560	<590
TOLUENE	SW8260B	µg/kg	5	99J	<590
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<560	<590
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<560	<590
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<560	<590
TRICHLOROETHENE	SW8260B	µg/kg	5	<560	<590
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<560	<590
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<560	<590
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	81J	<590
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<560	<590
VINYL CHLORIDE	SW8260B	µg/kg	5	<560	<590
XYLENE (TOTAL)	SW8260B	µg/kg	10	110J	<1200
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<2200	<2400

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-04(40') 04-02393-8	CL1-GP-04(55') 04-02393-9
PAH					
Dilution Factor				1	1
ACENAPHTHENE	8270-SIM	μg/kg	5	<5.6	<5.9
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<5.6	<5.9
ANTHRACENE	8270-SIM	μg/kg	5	<5.6	<5.9
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<5.6	<5.9
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<5.6	<5.9
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<5.6	<5.9
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<5.6	<5.9
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<5.6	<5.9
CHRYSENE	8270-SIM	μg/kg	5	<5.6	<5.9
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<5.6	<5.9
FLUORANTHENE	8270-SIM	μg/kg	5	<5.6	<5.9
FLUORENE	8270-SIM	μg/kg	5	<5.6	<5.9
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<5.6	<5.9
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	<5.6	<5.9
NAPHTHALENE	8270-SIM	μg/kg	5	<5.6	<5.9
PHENANTHRENE	8270-SIM	μg/kg	5	<5.6	<5.9
PYRENE	8270-SIM	μg/kg	5	<5.6	<5.9

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) Mixture in Diesel range, sample chromatogram also contained an isolated peak at about C11 range.

(b) Not a typical gas pattern. Most of the peaks in the chromatogram correspond to the heavier portion of the chain.

(c) Similar to JP-5 pattern.

(d) Sample contained Fuel Oil compounds, dilution was necessary.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Crows Landing-CTO 86/836557

For Shaw E & I

APCL Service No: 04-2393

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
CL1-GP-04(30')	04-02393-7
CL1-GP-04(40')	04-02393-8
CL1-GP-04(55')	04-02393-9
CL1-GP-02(30')	04-02393-4
CL1-GP-02(40')	04-02393-5
CL1-GP-02(55')	04-02393-6
CL1-GP-01(30')	04-02393-1
CL1-GP-01(40')	04-02393-2
CL1-GP-01(55')	04-02393-3

2. Analytical Methodology

Samples are analyzed by EPA methods

ASTM-D2216 (Moisture, percent in soil),
SW8260B (Volatile organics),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
M8015V (Gasoline),
M8015V (JP-4),
8270-SIM (PAH),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

Emails requesting Silica Gel clean-up and cancelling MS/MSD analyses.

6. Anomaly

(1) SW8270C - SIM, PAH:

Surrogate Nitrobenzene-d5 recoveries in the samples CL1-GP-04(40') and CL1-GP-04(55') were outside of control limits, due to matrix interference from compounds in fuel range. There were no target analytes detected in these samples.

(2) M8015V:

Surrogate BFB recovery in the sample CL1-GP-04(55') was 151%, higher than 75-125% control limits, due to matrix interference from compounds other than Gasoline.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: Crows Landing

APCL Service ID: 04-2393

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

CHAIN OF CUSTODY

Ref. Document # CL-~~1055~~ 1058

Shaw
Shaw Environmental and Infrastructure Inc.
4005 Port Chicago Hwy
Concord, CA 94520

2393

Project Number: 836557
Project Name / Location: Crows Landing - CTO 86
Purchase Order #: 205733

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Shipment Date: 04/05/2004
Waybill Number: UPS#1Z71V0920196631992
Lab Destination: APCL, 13760 Magnolia Ave, Chino, 91710
Lab Contact Name / ph. #: Hsin-Yi, 301-618-8889

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2152
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Sampler's Name(s): P.DEOCAMPO

Analyses Requested

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container Type	VOCs (8260B)	TPH-Diesel & Motor Oil (EPA 8015B	TPH-Gas & Jet fuel (EPA 8015B)	Metals(Title 22-diss). (6010B/7000)	Alkalinity, TDS, Anions	PAHs				
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice				
							Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice				
							Container Type	3-VOA Encore	2-A Liter 8-oz	2-VOA Encore	1-HDPE 8-oz	1-HDPE Liter 8-oz	250 ml HDPE 8-oz				
CL1-GP-04(30')	DPT sampling @ cluster1	04/05/2004	09:45	G	SO	5/1		X	X	X			X				
CL1-GP-04(40')	DPT sampling @ cluster1	04/05/2004	10:04	G	SO	5/1		X	X	X			X				
CL1-GP-04(55')	DPT sampling @ cluster1	04/05/2004	10:35	G	SO	5/1		X	X	X			X				
CL1-GP-02(30')	DPT sampling @ cluster1	04/05/2004	12:55	G	SO	5/1		X	X	X			X				
CL1-GP-02(40')	DPT sampling @ cluster1	04/05/2004	13:10	G	SO	5/1		X	X	X			X				
CL1-GP-02(55')	DPT sampling @ cluster1	04/05/2004	13:45	G	SO	5/1		X	X	X			X				
CL1-GP-01(30')	DPT sampling @ cluster1	04/05/2004	15:15	G	SO	5/1		X	X	X			X				
CL1-GP-01(40')	DPT sampling @ cluster1	04/05/2004	15:30	G	SO	5/1		X	X	X			X				

Special Instructions:

Turnaround Time: ☐ 24-hr ☐ 48-hr
X Normal- 10 Day ☐ 3-day ☐ 5-day

Level Of QC Required: I II III Project Specific:

Relinquished By: Date: 4/5/04 Time: 1600
Received By: Date: 4/6/04 Time: 0954
Relinquished By: Date: Time:
Received By: Date: Time:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

CHAIN OF CUSTODY

Ref. Document # CL-1055

Page 2 of 2

2393

Project Number: *835667*
Project Name / Location: *Crows Landing CTO 86*
Shipment Date: 04/05/2004

								Analyses Requested									
								VOCs (8260B)	TPH-Diesel & Motor Oil (EPA	TPH-Gas & Jet fuel (EPA 801	Metals(Title 22-diss). (6010B/	Alkalinity, TDS, Anions	PAHS			Use for MS/MSD	
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice				
		Collection Information					Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice				
Sample ID Number	Sample Description	Date	Time	Method	Matrix	# of containers	Container Type	VOA Encore	A Liter 8-oz	VOA Encore	HDPE 8-oz	HDPE Liter 8-oz	250 ml HDPE 8-oz				
CL1-GP-01(55')	DPT sampling @ cluster 1	04/05/2004	16:00	SO	GW	5/1		X	X	X			X			X	
																X	

CHAIN OF CUSTODY

Ref. Document # CL-1058

Shaw
Shaw Environmental and Infrastructure Inc.
4005 Port Chicago Hwy
Concord, CA 94520

Project Number: 836557
Project Name / Location: Crows Landing - CTO 86
Purchase Order #: 205733

Project Manager: Bob Hulet 925-288-9898
(Name & phone #)

Shipment Date: 04/05/2004
Waybill Number: UPS#1Z71V0920196631992
Lab Destination: APCL, 13760 Magnolia Ave, Chino, 91710
Lab Contact Name / ph. #: Hsin-Yi, 301-618-8889

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2152
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Sampler's Name(s): P.DEOCAMPO

Analyses Requested

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container Type	VOCs (8260B)	TPH-Diesel & Motor Oil (EPA 8015B)	TPH-Gas & Jet fuel (EPA 8015B)	Metals(Title 22-diss). (6010B/7000)	Alkalinity, TDS, Anions	PAHs				
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice				
							Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice				
							Container Type	3-VOA Encore	2-A Liter 8-oz	2-VOA Encore	1-HDPE 8-oz	1-HDPE Liter 8-oz	250 ml HDPE 8-oz				
CL1-GP-04(30')	DPT sampling @ cluster1	04/05/2004	9:45	G	SO	5/1		X	X	X			X				
CL1-GP-04(40')	DPT sampling @ cluster1	04/05/2004	10:04	G	SO	5/1		X	X	X			X				
CL1-GP-04(55')	DPT sampling @ cluster1	04/05/2004	10:35	G	SO	5/1		X	X	X			X				
CL1-GP-02(30')	DPT sampling @ cluster1	04/05/2004	12:55	G	SO	5/1		X	X	X			X				
CL1-GP-02(40')	DPT sampling @ cluster1	04/05/2004	13:10	G	SO	5/1		X	X	X			X				
CL1-GP-02(55')	DPT sampling @ cluster1	04/05/2004	13:45	G	SO	5/1		X	X	X			X				
CL1-GP-01(30')	DPT sampling @ cluster1	04/05/2004	15:15	G	SO	5/1		X	X	X			X				
CL1-GP-01(40')	DPT sampling @ cluster1	04/05/2004	15:30	G	SO	5/1		X	X	X			X				

Special Instructions: Silica Gel Cleanup for TPH-diesel / MO

Turnaround Time: ☐ 24-hr ☐ 48-hr
X Normal- 10 Day ☐ 3-day ☐ 5-day

Level Of QC Required: I II III Project Specific:

Relinquished By: Date: Time:
Received By: Date: Time:
Relinquished By: Date: Time:
Received By: Date: Time:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

CHAIN OF CUSTODY

Ref. Document # CL-1058

Project Number: *835667*
Project Name / Location: *Crows Landing CTO 86*
Shipment Date: 04/05/2004

		Collection Information					Analyses Requested									
							VOCs (8260B)	TPH-Diesel & Motor Oil (EPA	TPH-Gas & Jet fuel (EPA 801	Metals(Title 22-diss). (6010B)	Alkalinity, TDS, Anions	PAHS			Use for MS/MSD	
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice			
							Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice			
Sample ID Number	Sample Description	Date	Time	Method	Matrix	# of containers	Container Type	VOA Encore	A Liter 8-oz	VOA Encore	HDPE 8-oz	HDPE Liter 8-oz	250 ml HDPE 8-oz			
CL1-GP-01(55')	DPT sampling @ cluster 1	04/05/2004	16:00	SO	GW	5/1		X	X	X			X			

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

Mry 06, 2004

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 04-2432 and your project Crows Landing. Enclosed please find:

(1) Original Analytical Report.
(2) Original Chain of Custody.
(3) Original and one Compact Disc of Level D Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-042432
Collected by: P.Deocampo
Collected on: 04/06/04

Received: 04/07/04
Extracted: 04/07-09/04
Tested: 04/07-05/04/04
Revised: 05/05/04

Sample Description: Soil
Project Description: 836557 Crows Landing-CTO86

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-05(30') 04-02432-1	CL1-GP-05(40') 04-02432-2	CL1-GP-05(55') 04-02432-3
PERCENT MOISTURE	ASTM-D2216	W%	0.5	13.6	3.2	15.7
Dilution Factor				50	1.08	1.23
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	130 [a]	0.04J	0.4J [a]
Dilution Factor				50	1.08	1.23
JET FUEL, JP-4	M8015V	mg/kg	0.5	<29	<0.56	<0.73
Dilution Factor				100	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	12,000 [b]	<10	10J [c]
Dilution Factor				100	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<1200	1J	1J
VOLATILE ORGANICS						
Dilution Factor				100 [d]	1.1	1.03
ACETONE	SW8260B	µg/kg	100	<12000	<110	<120
BENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
BROMOBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
BROMOFORM	SW8260B	µg/kg	5	<580	<5.7	<6.1
BROMOMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<12000	<110	<120
N-BUTYLBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	2,400	<5.7	<6.1
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	170J	<5.7	<6.1
CARBON DISULFIDE	SW8260B	µg/kg	100	<12000	<110	<120
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<580	<5.7	<6.1
CHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
CHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
CHLOROFORM	SW8260B	µg/kg	5	<580	<5.7	<6.1
CHLOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<580	<5.7	<6.1
DIBROMOMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<580	<5.7	<6.1

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-05(30') 04-02432-1	CL1-GP-05(40') 04-02432-2	CL1-GP-05(55') 04-02432-3
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
ETHYLBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
2-HEXANONE	SW8260B	µg/kg	50	<5800	<57	<61
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	61J	<5.7	<6.1
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	3,200	<5.7	<6.1
METHYLENE CHLORIDE	SW8260B	µg/kg	5	530J	4J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<5800	<57	<61
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<580	<5.7	<6.1
NAPHTHALENE	SW8260B	µg/kg	5	10,000	<5.7	<6.1
N-PROPYLBENZENE	SW8260B	µg/kg	5	150J	<5.7	<6.1
STYRENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TETRACHLOROETHENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TOLUENE	SW8260B	µg/kg	5	110J	<5.7	<6.1
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TRICHLOROETHENE	SW8260B	µg/kg	5	<580	<5.7	<6.1
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<580	<5.7	<6.1
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	10,000	<5.7	<6.1
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	2,400	<5.7	<6.1
VINYL CHLORIDE	SW8260B	µg/kg	5	<580	<5.7	<6.1
XYLENE (TOTAL)	SW8260B	µg/kg	10	210J	<11	<12
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<2300	<23	722

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-05(30') 04-02432-1	CL1-GP-05(40') 04-02432-2	CL1-GP-05(55') 04-02432-3
PAH						
Dilution Factor				100 [d]	1	1
ACENAPHTHENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
ANTHRACENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
CHRYSENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
FLUORANTHENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
FLUORENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	10,000	<5.2	2J
NAPHTHALENE	8270-SIM	μg/kg	5	6,500	<5.2	<5.9
PHENANTHRENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9
PYRENE	8270-SIM	μg/kg	5	<580	<5.2	<5.9

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-08(30') 04-02432-4	CL1-GP-08(40') 04-02432-5	CL1-GP-08(55') 04-02432-6
PERCENT MOISTURE	ASTM-D2216	W%	0.5	15.3	13.1	15.9
Dilution Factor				1.24	50	50
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.04J	150 [a]	30 [a]
Dilution Factor				1.24	50	50
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.73	<29	<30
Dilution Factor				1	100	10
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<12	5,400 [b]	680 [b]
Dilution Factor				1	100	10
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	1J	<1200	<120

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-08(30') 04-02432-4	CL1-GP-08(40') 04-02432-5	CL1-GP-08(55') 04-02432-6
VOLATILE ORGANICS						
Dilution Factor				0.91	100 (d)	0.97
ACETONE	SW8260B	µg/kg	100	<110	<12000	20J
BENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
BROMOBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
BROMOFORM	SW8260B	µg/kg	5	<5.4	<580	<5.8
BROMOMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<110	<12000	<120
N-BUTYLBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<5.4	1,300	<5.8
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<5.4	72J	<5.8
CARBON DISULFIDE	SW8260B	µg/kg	100	<110	<12000	5J
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<5.4	<580	<5.8
CHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
CHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
CHLOROFORM	SW8260B	µg/kg	5	<5.4	<580	<5.8
CHLOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<5.4	<580	<5.8
DIBROMOMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
ETHYLBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
2-HEXANONE	SW8260B	µg/kg	50	<54	<5800	<58

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-08(30') 04-02432-4	CL1-GP-08(40') 04-02432-5	CL1-GP-08(55') 04-02432-6
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<5.4	<580	<5.8
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<5.4	2,100	<5.8
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	450J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<54	<5800	<58
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<5.4	<580	<5.8
NAPHTHALENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
STYRENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TOLUENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.4	<580	<5.8
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.4	180J	<5.8
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.4	<580	<5.8
XYLENE (TOTAL)	SW8260B	µg/kg	10	<11	<1200	<12
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<21	<2300	93
PAH						
Dilution Factor				1	100 (d)	1
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.9	<580	-
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.9	<580	-
ANTHRACENE	8270-SIM	µg/kg	5	<5.9	<580	-
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.9	<580	-
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.9	<580	-
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.9	<580	-
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.9	<580	-
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.9	<580	-
CHRYSENE	8270-SIM	µg/kg	5	<5.9	<580	-
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.9	<580	-
FLUORANTHENE	8270-SIM	µg/kg	5	<5.9	<580	-
FLUORENE	8270-SIM	µg/kg	5	<5.9	<580	-
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.9	<580	-
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	20	2,000	-
NAPHTHALENE	8270-SIM	µg/kg	5	25	1,000	-
PHENANTHRENE	8270-SIM	µg/kg	5	<5.9	<580	-
PYRENE	8270-SIM	µg/kg	5	<5.9	<580	-

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-08(30') 04-02432-4	CL1-GP-08(40') 04-02432-5	CL1-GP-08(55') 04-02432-6
PAH						
Dilution Factor				1	1	10 [d]
ACENAPHTHENE	8270-SIM	μg/kg	5	-	-	<59
ACENAPHTHYLENE	8270-SIM	μg/kg	5	-	-	<59
ANTHRACENE	8270-SIM	μg/kg	5	-	-	<59
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	-	-	<59
BENZO(A)PYRENE	8270-SIM	μg/kg	5	-	-	<59
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	-	-	<59
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	-	-	<59
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	-	-	<59
CHRYSENE	8270-SIM	μg/kg	5	-	-	<59
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	-	-	<59
FLUORANTHENE	8270-SIM	μg/kg	5	-	-	<59
FLUORENE	8270-SIM	μg/kg	5	-	-	<59
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	-	-	<59
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	-	-	<59
NAPHTHALENE	8270-SIM	μg/kg	5	-	-	<59
PHENANTHRENE	8270-SIM	μg/kg	5	-	-	<59
PYRENE	8270-SIM	μg/kg	5	-	-	<59

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-09(30') 04-02432-7	CL1-GP-09(40') 04-02432-8	CL1-GP-09(55') 04-02432-9
PERCENT MOISTURE	ASTM-D2216	W%	0.5	3.8	12.2	16.6
Dilution Factor				1.07	0.92	50
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.04J	0.1J	21J [a]
Dilution Factor				1.07	0.92	50
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.56	<0.52	<30
Dilution Factor				1	5	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<10	310 [b]	79 [b]
Dilution Factor				1	5	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<10	<57	<12

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-09(30') 04-02432-7	CL1-GP-09(40') 04-02432-8	CL1-GP-09(55') 04-02432-9
VOLATILE ORGANICS						
Dilution Factor				1.32	0.99	100 (d)
ACETONE	SW8260B	µg/kg	100	<140	<110	<12000
BENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
BROMOBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
BROMOFORM	SW8260B	µg/kg	5	<6.9	<5.6	<600
BROMOMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<140	<110	<12000
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CARBON DISULFIDE	SW8260B	µg/kg	100	<140	<110	<12000
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CHLOROFORM	SW8260B	µg/kg	5	<6.9	<5.6	<600
CHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<6.9	<5.6	<600
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
ETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
2-HEXANONE	SW8260B	µg/kg	50	<69	<56	<6000
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.9	<5.6	<600
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
METHYLENE CHLORIDE	SW8260B	µg/kg	5	4J	3J	530J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<69	<56	<6000
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<6.9	<5.6	<600
NAPHTHALENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
STYRENE	SW8260B	µg/kg	5	<6.9	<5.6	<600

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-09(30') 04-02432-7	CL1-GP-09(40') 04-02432-8	CL1-GP-09(55') 04-02432-9
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TOLUENE	SW8260B	µg/kg	5	0.9J	<5.6	<600
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.6	<600
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.9	<5.6	<600
XYLENE (TOTAL)	SW8260B	µg/kg	10	<14	<11	<1200
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<27	<23	<2400
PAH						
Dilution Factor				1	1	10 (d)
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
ANTHRACENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
CHRYSENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
FLUORANTHENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
FLUORENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.2	8	<60
NAPHTHALENE	8270-SIM	µg/kg	5	<5.2	7	<60
PHENANTHRENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60
PYRENE	8270-SIM	µg/kg	5	<5.2	<5.7	<60

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
† All results are reported on dry basis for soil samples.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Not a typical Gasoline or JP-4 pattern.
(b) Similar to JP-5.
(c) Mixture in JP5/Diesel range.
(d) Sample contained Fuel Oil compounds, dilution was necessary.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

APCL

Applied Physics & Chemistry Laboratory

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May 03, 2004

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 04-2446 and your project: 836557 Crows Landing.
Enclosed please find:

(1) Original Analytical Report.
(2) Original Chain of Custody.
(3) Original and one compact disc of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CONFORMS
REVIEWER: TD
DATE: 5-13-04

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-042446
Collected by: P.Deocampo
Collected on: 04/07/04

Received: 04/08/04
Extracted: 04/08-09/04
Tested: 04/08-30/04
Reported: 04/30/04

Sample Description: Soil
Project Description: 836557 Crows Landing-CTO 86

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result CL-99-82 04-02446-1	CL1-GP-03(30') 04-02446-2	CL1-GP-03(40') 04-02446-3	CL1-GP-03(55') 04-02446-4
PERCENT MOISTURE	ASTM-D2216	W%	0.5	14.2	15.3	15.1	14.7
Dilution Factor				0.89	0.95	1.03	1.01
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.04J	0.02J	0.03J	0.02J
Dilution Factor				0.89	0.95	1.03	1.01
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.52	<0.56	<0.61	<0.59
Dilution Factor				1	1	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<12	2J	<12	<12
Dilution Factor				1	1	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<12	<12	<12	<12
VOLATILE ORGANICS							
Dilution Factor				0.94	0.84	0.85	0.82
ACETONE	SW8260B	µg/kg	100	<110	<99	<100	<96
BENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
BROMOBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
BROMOFORM	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
BROMOMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<110	<99	<100	<96
N-BUTYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CARBON DISULFIDE	SW8260B	µg/kg	100	<110	<99	<100	<96
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CHLOROFORM	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CHLOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
DIBROMOMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result			
				CL-99-82	CL1-GP-03(30')	CL1-GP-03(40')	CL1-GP-03(55')
				04-02446-1	04-02446-2	04-02446-3	04-02446-4
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
ETHYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
2-HEXANONE	SW8260B	µg/kg	50	<55	<50	<50	<48
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	2J	3J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<55	<50	<50	<48
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
NAPHTHALENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
STYRENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TOLUENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.5	<5.0	<5.0	<4.8
XYLENE (TOTAL)	SW8260B	µg/kg	10	<11	<9.9	<10	<9.6
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<22	<20	<20	<19

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL-99-82 04-02446-1	CL1-GP-03(30') 04-02446-2	CL1-GP-03(40') 04-02446-3	CL1-GP-03(55') 04-02446-4
PAH							
Dilution Factor				1	1	1	1
ACENAPHTHENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
CHRYSENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
FLUORANTHENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
FLUORENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
NAPHTHALENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
PHENANTHRENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9
PYRENE	8270-SIM	μg/kg	5	<5.8	<5.9	<5.9	<5.9

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-06(30') 04-02446-5	CL1-GP-06(40') 04-02446-6	CL1-GP-06(55') 04-02446-7	CL1-GP-07(30') 04-02446-8
PERCENT MOISTURE	ASTM-D2216	W%	0.5	13.1	14.6	16.1	10.7
Dilution Factor				0.88	0.93	0.9	100
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.02J	0.02J	0.04J	280 [a]
Dilution Factor				0.88	0.93	0.9	100
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.51	<0.54	<0.54	<56
Dilution Factor				1	1	1	100
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<12	<12	<12	9,700 [b]
Dilution Factor				1	1	1	100
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<12	<12	<12	<1100

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-06(30') 04-02446-5	CL1-GP-06(40') 04-02446-6	CL1-GP-06(55') 04-02446-7	CL1-GP-07(30') 04-02446-8
VOLATILE ORGANICS							
Dilution Factor				0.78	0.86	0.94	500 (c)
ACETONE	SW8260B	µg/kg	100	<90	<100	<110	<56000
BENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
BROMOBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
BROMOFORM	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
BROMOMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<90	<100	<110	<56000
N-BUTYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	6,900
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	570J
CARBON DISULFIDE	SW8260B	µg/kg	100	<90	<100	<110	<56000
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CHLOROFORM	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CHLOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
DIBROMOMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
ETHYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
2-HEXANONE	SW8260B	µg/kg	50	<45	<50	<56	<28000

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-06(30') 04-02446-5	CL1-GP-06(40') 04-02446-6	CL1-GP-06(55') 04-02446-7	CL1-GP-07(30') 04-02446-8
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	6,000
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	6,000
METHYLENE CHLORIDE	SW8260B	µg/kg	5	2J	3J	3J	2,200J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<45	<50	<56	<28000
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
NAPHTHALENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	16,000
N-PROPYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	4,000
STYRENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TETRACHLOROETHENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TOLUENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	390J
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TRICHLOROETHENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	46,000
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	16,000
VINYL CHLORIDE	SW8260B	µg/kg	5	<4.5	<5.0	<5.6	<2800
XYLENE (TOTAL)	SW8260B	µg/kg	10	<9.0	<10	<11	2,900J
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<18	<20	<22	<11000
PAH							
Dilution Factor				1	1	1	40
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
ANTHRACENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
CHRYSENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
FLUORANTHENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
FLUORENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	15,300
NAPHTHALENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	8,650
PHENANTHRENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220
PYRENE	8270-SIM	µg/kg	5	<5.8	<5.9	<6.0	<220

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-07(40') 04-02446-9	CL1-GP-07(55') 04-02446-10	CL1-GP-11(30') 04-02446-11	CL1-GP-11(40') 04-02446-12
PERCENT MOISTURE	ASTM-D2216	W%	0.5	7.2	13.1	13.5	15.6
Dilution Factor				1.05	0.95	0.9	0.88
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.1J [a]	0.06J	0.04J	0.04J
Dilution Factor				1.05	0.95	0.9	0.88
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.57	<0.55	<0.52	<0.52
Dilution Factor				1	1	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	160 [d]	2J [d]	<12	3J [d]
Dilution Factor				1	1	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<11	<12	<12	<12
VOLATILE ORGANICS							
Dilution Factor				1.28	0.93	0.78	0.92
ACETONE	SW8260B	µg/kg	100	<140	<110	<90	<110
BENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
BROMOBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
BROMOFORM	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
BROMOMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<140	<110	<90	<110
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CARBON DISULFIDE	SW8260B	µg/kg	100	<140	<110	<90	<110
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CHLOROFORM	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CHLOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-07(40') 04-02446-9	CL1-GP-07(55') 04-02446-10	CL1-GP-11(30') 04-02446-11	CL1-GP-11(40') 04-02446-12
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
ETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
2-HEXANONE	SW8260B	µg/kg	50	<69	<53	<45	<55
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.9	3J	<4.5	<5.5
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
METHYLENE CHLORIDE	SW8260B	µg/kg	5	4J	3J	2J	3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<69	<53	<45	<55
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
NAPHTHALENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
STYRENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TOLUENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.9	<5.3	<4.5	<5.5
XYLENE (TOTAL)	SW8260B	µg/kg	10	<14	<11	<9.0	<11
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<28	54	<18	<22

Applied P & CH Laboratories
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Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-07(40') 04-02446-9	CL1-GP-07(55') 04-02446-10	CL1-GP-11(30') 04-02446-11	CL1-GP-11(40') 04-02446-12
PAH							
Dilution Factor				4	1	1	1
ACENAPHTHENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
ANTHRACENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
CHRYSENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
FLUORANTHENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
FLUORENE	8270-SIM	μg/kg	5	48	<5.8	<5.8	<5.9
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	473	<5.8	<5.8	<5.9
NAPHTHALENE	8270-SIM	μg/kg	5	92	<5.8	<5.8	<5.9
PHENANTHRENE	8270-SIM	μg/kg	5	10J	<5.8	<5.8	<5.9
PYRENE	8270-SIM	μg/kg	5	<22	<5.8	<5.8	<5.9

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) Not a typical Gasoline or JP-4 pattern.

(b) Similar to JP-5.

(c) Sample contained Fuel Oil compounds, dilution was necessary.

(d) Mixture in JP-5 range.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project:836557 Crows Landing

APCL Service ID: 04-2446

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Crows Landing-CTO 86/836557

For Shaw E & I

APCL Service No: 04-2446

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
CL1-GP-03(30')	04-02446-2
CL1-GP-03(40')	04-02446-3
CL1-GP-03(55')	04-02446-4
CL1-GP-06(30')	04-02446-5
CL1-GP-06(40')	04-02446-6
CL1-GP-06(55')	04-02446-7
CL-99-82	04-02446-1
CL1-GP-07(30')	04-02446-8
CL1-GP-07(40')	04-02446-9
CL1-GP-07(55')	04-02446-10
CL1-GP-11(30')	04-02446-11
CL1-GP-11(40')	04-02446-12

2. Analytical Methodology

Samples are analyzed by EPA methods

ASTM-D2216 (Moisture, percent in soil),
8260B (Volatile organics),
M8015E/M8015D (TPH: Diesel),
M8015E/M8015M (TPH: Motor Oil),
M8015V/M8015G (Gasoline),
M8015V/M8015V (JP-4),
PAH-SIM (PAH),
9040B/150.1 (pH),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

(1) SW8270C - SIM, PAH:

Surrogates 2-Fluorobiphenyl and Nitrobenzene-d5 recoveries in the sample CL1-GP-07(30') were not evaluated, due to 40 times dilution factor used for the analysis and matrix interference from compounds in fuel range. They are reported as recovered with 0%.

Surrogate Terphenyl-d14 recovery in the sample CL1-GP-07(40') was 131%, slightly higher than 129% upper control limit.

(2) M8015V:

Surrogate BFB recovery in the sample CL1-GP-07(30') was 172%, higher than 75-125% control limits, due to matrix interference from compounds other than Gasoline.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Shaw

Shaw Environmental Inc.

4005 Port Chicago Hwy
Concord, CA 94520

Ref. Document # CL-1060

2446

Project Number: 836557
Project Name / Location: Crows Landing - CTO 86
Purchase Order #: 205733

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Shipment Date: 04/07/2004
Waybill Number: UPS#1Z71V 092 01 9133 4830
Lab Destination: APCL, 13760 Magnolia Ave, Chino, 91710
Lab Contact Name / ph. #: Hsin-Yi, 301-618-8889

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2152
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Sampler's Name(s): P.DEOCAMPO

Analyses Requested

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container Type	VOCs (8260B)	TPH-Diesel & Motor Oil (EPA 8015B	TPH-Gas & Jet fuel (EPA 8015B)	Metals(Title 22-diss). (6010B/7000)	Alkalinity, TDS, Anions	PAHs
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice
							Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice
							Container Type	3-VOA Encore	2-A Liter 8-oz	2-VOA Encore	1-HDPE 8-oz	1-HDPE Liter 8-oz	250 ml HDPE 8-oz
CL1-GP-03(30')	DPT sampling @ cluster1	04/07/2004	08:00	G	SO	5/1		X	X	X			X
CL1-GP-03(40')	DPT sampling @ cluster1	04/07/2004	08:15	G	SO	5/1		X	X	X			X
CL1-GP-03(55')	DPT sampling @ cluster1	04/07/2004	08:40	G	SO	5/1		X	X	X			X
CL1-GP-06(30')	DPT sampling @ cluster1	04/07/2004	10:04	G	SO	5/1		X	X	X			X
CL1-GP-06(40')	DPT sampling @ cluster1	04/07/2004	10:20	G	SO	5/1		X	X	X			X
CL1-GP-06(55')	DPT sampling @ cluster1	04/07/2004	11:10	G	SO	5/1		X	X	X			X
CL-99-82	DPT sampling @ cluster2	04/07/2004	11:15	G	SO	5/1		X	X	X			X
CL1-GP-07(30')	DPT sampling @ cluster1	04/07/2004	13:20	G	SO	5/1		X	X	X			X
CL1-GP-07(40')	DPT sampling @ cluster2	04/07/2004	13:30	G	SO	5/1		X	X	X			X
CL1-GP-07(55')	DPT sampling @ cluster1	04/07/2004	14:06	G	SO	5/1		X	X	X			X

Special Instructions: Silica Gel Cleanup for TPH-Diesel / MO

Turnaround Time: ☐ 24-hr ☐ 48-hr
X Normal- 10 Day ☐ 3-day ☐ 5-day

Level Of QC Required: I II III Project Specific:

Relinquished By: Date: 4/7/04 Time: 1600
Received By: Date: 4/8/04 Time: 1010
Relinquished By: Date: Time:
Received By: Date: Time:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO =Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples

Shaw

Shaw Environmental Inc.

4005 Port Chicago Hwy
Concord, CA 94520

CHAIN OF CUSTODY

2446

Ref. Document # CL-1060

Page 2 of 2

Project Number: 835667

Project Name / Location: Crows Landing CTO 86

Shipment Date: 04/07/2004

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container Type	VOCs (8260B)	TPH-Diesel & Motor Oil (EPA	TPH-Gas & Jet fuel (EPA 801	Metals(Title 22-diss). (6010B/	Alkalinity, TDS, Anions	PAHS			Use for MS/MSD	
							Preservative (water)	HCL	Ice	HCL	HNO_3	Ice	Ice				
							Preservative (soil)	Ice	Ice	Ice	Ice	Ice	Ice				
							Container Type	VOA Encore	A Liter 8-oz	VOA Encore	HDPE 8-oz	HDPE Liter 8-oz	250 ml HDPE 8-oz				
CL1-GP-11(30')	DPT sampling @ cluster 1	04/07/2004	15:10	G	SO	5/1		X	X	X			X				
CL1-GP-11(40')	DPT sampling @ cluster 1	04/07/2004	15:20	G	SO	5/1		X	X	X			X				

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

Mry 03, 2004

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 04-2484 and your project Crows Landing. Enclosed please find:

(1) Original Analytical Report.
(2) Original Chain of Custody.
(3) Original and one Compact Disc of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CONFORMS
REVIEWER: T D
DATE: 5-12-04

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-042484
Collected by: P.DeOcampo
Collected on: 04/08/04

Received: 04/09/04
Extracted: 04/09-12/04
Tested: 04/09-15/04
Reported: 05/03/04

Sample Description: Soil
Project Description: 836557 Crows Landing-CTO86

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-10(30') 04-02484-1	CL1-GP-10(40') 04-02484-2	CL1-GP-10(55') 04-02484-3	CL1-GP-11(55') 04-02484-4
PERCENT MOISTURE	ASTM-D2216	W%	0.5	11.3	13.3	13.8	16.4
Dilution Factor				0.83	1	50	1.03
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.04J	0.07J	110 [a]	0.2J [a]
Dilution Factor				0.83	1	50	1.03
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.47	<0.58	<29	<0.62
Dilution Factor				1	1	10	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<11	<12	620 [b]	7J [b]
Dilution Factor				1	1	10	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<11	<12	<120	<12
VOLATILE ORGANICS							
Dilution Factor				0.88	1	100	1.11
ACETONE	SW8260B	µg/kg	100	<99	<120	2,100J	<130
BENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
BROMOBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
BROMOFORM	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
BROMOMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<99	<120	<12000	<130
N-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	530J	<6.6
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	900	<6.6
CARBON DISULFIDE	SW8260B	µg/kg	100	<99	<120	<12000	<130
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CHLOROFORM	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CHLOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
DIBROMOMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<5.8	77J	<6.6
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-10(30') 04-02484-1	CL1-GP-10(40') 04-02484-2	CL1-GP-10(55') 04-02484-3	CL1-GP-11(55') 04-02484-4
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
ETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
2-HEXANONE	SW8260B	µg/kg	50	<50	<58	<5800	<66
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<5.0	<5.8	210J	<6.6
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<5.0	<5.8	250J	<6.6
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	3J	470J	4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<50	<58	<5800	<66
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
NAPHTHALENE	SW8260B	µg/kg	5	<5.0	<5.8	1,500	<6.6
N-PROPYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
STYRENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
TETRACHLOROETHENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
TOLUENE	SW8260B	µg/kg	5	<5.0	<5.8	61J	<6.6
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
TRICHLOROETHENE	SW8260B	µg/kg	5	<5.0	<5.8	180J	<6.6
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	900	<6.6
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<5.0	<5.8	340J	<6.6
VINYL CHLORIDE	SW8260B	µg/kg	5	<5.0	<5.8	<580	<6.6
XYLENE (TOTAL)	SW8260B	µg/kg	10	<9.9	<12	<1200	<13
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<20	<23	<2300	55

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-10(30') 04-02484-1	CL1-GP-10(40') 04-02484-2	CL1-GP-10(55') 04-02484-3	CL1-GP-11(55') 04-02484-4
PAH							
Dilution Factor		-		1	1	10	1
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
CHRYSENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
FLUORENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.6	<5.8	1,430	<6.0
NAPHTHALENE	8270-SIM	µg/kg	5	<5.6	<5.8	860	<6.0
PHENANTHRENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0
PYRENE	8270-SIM	µg/kg	5	<5.6	<5.8	<58	<6.0

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-12(30') 04-02484-5	CL1-GP-12(40') 04-02484-6	CL1-GP-12(55') 04-02484-7
PERCENT MOISTURE	ASTM-D2216	W%	0.5	10.5	9.4	19.4
Dilution Factor				1	0.99	1.3
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.05J	0.05J	0.05J
Dilution Factor				1	0.99	1.3
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.56	<0.55	<0.81
Dilution Factor				1	1	1
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<11	<11	<12
Dilution Factor				1	1	1
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<11	<11	<12

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-12(30') 04-02484-5	CL1-GP-12(40') 04-02484-6	CL1-GP-12(55') 04-02484-7
VOLATILE ORGANICS						
Dilution Factor				1.08	1.03	1.32
ACETONE	SW8260B	µg/kg	100	<120	<110	<160
BENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
BROMOBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
BROMOFORM	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
BROMOMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<120	<110	<160
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CARBON DISULFIDE	SW8260B	µg/kg	100	<120	<110	<160
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CHLOROFORM	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CHLOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
ETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
2-HEXANONE	SW8260B	µg/kg	50	<60	<57	<82

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-12(30') 04-02484-5	CL1-GP-12(40') 04-02484-6	CL1-GP-12(55') 04-02484-7
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
METHYLENE CHLORIDE	SW8260B	µg/kg	5	3J	3J	4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<60	<57	<82
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
NAPHTHALENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
STYRENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TOLUENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.0	<5.7	<8.2
XYLENE (TOTAL)	SW8260B	µg/kg	10	<12	<11	<16
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<24	<23	<33
PAH						
Dilution Factor				1	1	1
ACENAPHTHENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
ACENAPHTHYLENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
BENZO(A)ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
BENZO(A)PYRENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
BENZO(B)FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
BENZO(G,H,I)PERYLENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
BENZO(K)FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
CHRYSENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
DIBENZ(A,H)ANTHRACENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
FLUORANTHENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
FLUORENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
INDENO(1,2,3-C,D)PYRENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
2-METHYLNAPHTHALENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
NAPHTHALENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
PHENANTHRENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2
PYRENE	8270-SIM	µg/kg	5	<5.6	<5.5	<6.2

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-13(30') 04-02484-8	CL1-GP-13(40') 04-02484-9	CL1-GP-13(55') 04-02484-10
PERCENT MOISTURE	ASTM-D2216	W%	0.5	2.9	9.4	7.1
Dilution Factor				1.11	1.03	0.91
GASOLINE RANGE ORGANICS	M8015V	mg/kg	0.5	0.03J	0.04J	2.0 [a]
Dilution Factor				1.11	1.03	0.91
JET FUEL, JP-4	M8015V	mg/kg	0.5	<0.57	<0.57	<0.49
Dilution Factor				1	1	10
DIESEL RANGE ORGANICS	M8015E	mg/kg	10	<10	<11	590 [b]
Dilution Factor				1	1	10
MOTOR OIL RANGE ORGANICS	M8015E	mg/kg	10	<10	<11	<110
VOLATILE ORGANICS						
Dilution Factor				1.22	0.92	100
ACETONE	SW8260B	µg/kg	100	<130	<100	<11000
BENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
BROMOBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
BROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
BROMODICHLOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
BROMOFORM	SW8260B	µg/kg	5	<6.3	<5.1	<540
BROMOMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
2-BUTANONE (MEK)	SW8260B	µg/kg	100	<130	<100	<11000
N-BUTYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
SEC-BUTYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TERT-BUTYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	54J
CARBON DISULFIDE	SW8260B	µg/kg	100	<130	<100	<11000
CARBON TETRACHLORIDE	SW8260B	µg/kg	5	<6.3	<5.1	<540
CHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
DIBROMOCHLOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
CHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
CHLOROFORM	SW8260B	µg/kg	5	<6.3	<5.1	<540
CHLOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
2-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
4-CHLOROTOLUENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/kg	5	<6.3	<5.1	<540
DIBROMOMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,3-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,4-DICHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
DICHLORODIFLUOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1-DICHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2-DICHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1-DICHLOROETHENE	SW8260B	µg/kg	5	<6.3	<5.1	<540

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-13(30') 04-02484-8	CL1-GP-13(40') 04-02484-9	CL1-GP-13(55') 04-02484-10
CIS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,3-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
2,2-DICHLOROPROPANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
ETHYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
HEXACHLOROBUTADIENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
2-HEXANONE	SW8260B	µg/kg	50	<63	<51	<5400
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/kg	5	<6.3	<5.1	<540
P-ISOPROPYLTOLUENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
METHYLENE CHLORIDE	SW8260B	µg/kg	5	4J	3J	460J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/kg	50	<63	<51	<5400
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/kg	5	<6.3	<5.1	<540
NAPHTHALENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
N-PROPYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
STYRENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TETRACHLOROETHENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TOLUENE	SW8260B	µg/kg	5	<6.3	<5.1	79J
1,2,3-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2,4-TRICHLOROBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1,1-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,1,2-TRICHLOROETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TRICHLOROETHENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
TRICHLOROFLUOROMETHANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2,3-TRICHLOROPROPANE	SW8260B	µg/kg	5	<6.3	<5.1	<540
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	110J
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/kg	5	<6.3	<5.1	<540
VINYL CHLORIDE	SW8260B	µg/kg	5	<6.3	<5.1	<540
XYLENE (TOTAL)	SW8260B	µg/kg	10	<13	<10	79J
T-BUTYL ALCOHOL	SW8260B	µg/kg	20	<25	<20	<2200

Applied P & CH Laboratories
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result CL1-GP-13(30') 04-02484-8	CL1-GP-13(40') 04-02484-9	CL1-GP-13(55') 04-02484-10
PAH						
Dilution Factor				1	1	10 [c]
ACENAPHTHENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
ACENAPHTHYLENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
ANTHRACENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
BENZO(A)ANTHRACENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
BENZO(A)PYRENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
BENZO(B)FLUORANTHENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
BENZO(G,H,I)PERYLENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
BENZO(K)FLUORANTHENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
CHRYSENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
DIBENZ(A,H)ANTHRACENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
FLUORANTHENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
FLUORENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
INDENO(1,2,3-C,D)PYRENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
2-METHYLNAPHTHALENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
NAPHTHALENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
PHENANTHRENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54
PYRENE	8270-SIM	μg/kg	5	<5.1	<5.5	<54

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

[a] Not a typical Gasoline or JP-4 pattern.

[b] Similar to JP-5.

[c] Sample contained Fuel Oil compounds, dilution was necessary.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: Crows Landing

APCL Service ID: 04-2484

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
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Case Narrative

Project: Crows Landing-CTO86/836557

For Shaw E & I

APCL Service No: 04-2484

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
CL1-GP-11(55')	04-02484-4
CL1-GP-13(30')	04-02484-8
CL1-GP-13(40')	04-02484-9
CL1-GP-13(55')	04-02484-10
CL1-GP-10(30')	04-02484-1
CL1-GP-10(40')	04-02484-2
CL1-GP-10(55')	04-02484-3
CL1-GP-12(30')	04-02484-5
CL1-GP-12(40')	04-02484-6
CL1-GP-12(55')	04-02484-7

2. Analytical Methodology

Samples are analyzed by EPA methods

ASTM-D2216 (Moisture, percent in soil),
SW8260B (Volatile organics),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
M8015V (Gasoline),
M8015V (JP-4),
8270-SIM (PAH),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

Faxed revised COC with amended collection dates.

6. Anomaly

(1) SW8270C - PAH, SIM:

Sample CL1-GP-10(55') was diluted ten times, in order to bring Naphthalene and 2-Methylnaphthalene within calibration range. Sample CL1-GP-13(55') was diluted ten times, in order to reduce matrix interference.

There were no target analytes detected in the sample CL1-GP-13(55'). Surrogate 2-Fluorobiphenyl recoveries in these samples were 21-26%, lower than 33-126% control limits, due to dilution.

MS/MSD spiked on the sample CL1-GP-10(55') were analyzed without dilution. There was not possible to evaluate surrogate Nitrobenzene-d5 in these samples, due to matrix interference.

2-Methylnaphthalene recoveries in the MS/MSD spiked on the sample CL1-GP-10(55') were outside of control limits, due to high level of spiking analyte in the parent sample. Naphthalene, Dibenzo(a,h)anthracene and Benzo(g,h,i)perylene were also outside of control limits, due to matrix interference.

Internal Standard Perylene-d12 area count in the same MSD was 49.9% of that in the CCV, lower than 50-200% control limits. Same IS in the MS was within control limits.

(2) M8015V:

Surrogate BFB recoveries in the samples CL1-GP-10(40'), CL1-GP-10(55') and CL1-GP-13(55') were outside of control limits, due to matrix interference.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Shaw

Shaw Environmental Inc.
4005 Port Chicago Hwy
Concord, CA 94520

Ref. Document # CL-1061

Page 1 of 1

Project Number: 836557
Project Name / Location: Crows Landing - CTO 86
Purchase Order #: 205733

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Shipment Date: 04/08/2004
Waybill Number: 1Z 71V 092 01 9360 2448
Lab Destination: APCL, 13760 Magnolia Ave, Chino, 91710
Lab Contact Name / ph. #: Hsin-Yi, 301-618-8889

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2152
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Sampler's Name(s): P.DEOCAMPO

Analyses Requested: VOCs (8260B), TPH-Diesel & Motor Oil (EPA 8015B), TPH-Gas & Jet fuel (EPA 8015B), PAHs, 2484, MS/MSD

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container Type	VOCs (8260B)	TPH-Diesel & Motor Oil (EPA 8015B)	TPH-Gas & Jet fuel (EPA 8015B)	PAHs	2484	MS/MSD				
							Preservative (water)	HCL	Ice	HCL	Ice						
							Preservative (soil)	Ice	Ice	Ice	Ice						
							Container Type	Encore	8oz. Jar	Encore	8oz. Jar						
CL1-GP-11(55')	DPT sampling @ cluster1	04/07/2004	07:45	G	SO	5/1		X	X	X	X						
CL1-GP-13(30')	DPT sampling @ cluster1	04/07/2004	10:45	G	SO	5/1		X	X	X	X						
CL1-GP-13(40')	DPT sampling @ cluster1	04/07/2004	11:00	G	SO	5/1		X	X	X	X						
CL1-GP-13(55')	DPT sampling @ cluster1	04/07/2004	11:40	G	SO	5/1		X	X	X	X						
CL1-GP-10(30')	DPT sampling @ cluster1	04/07/2004	13:10	G	SO	5/1		X	X	X	X						
CL1-GP-10(40')	DPT sampling @ cluster1	04/07/2004	13:25	G	SO	5/1		X	X	X	X						
CL1-GP-10(55')	DPT sampling @ cluster1	04/07/2004	14:20	G	SO	9/2		X	X	X	X		X				
CL1-GP-12(30')	DPT sampling @ cluster1	04/07/2004	15:25	G	SO	5/1		X	X	X	X						
CL1-GP-12(40')	DPT sampling @ cluster1	04/07/2004	15:40	G	SO	5/1		X	X	X	X						
CL1-GP-12(55')	DPT sampling @ cluster1	04/07/2004	16:00	G	SO	5/1		X	X	X	X						

Special Instructions: Silica Gel Cleanup for TPH-Diesel / MO
Note: MS/MSD taken at CL1-GP-10(55')

Turnaround Time: ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day X Normal- 10 Day

Level Of QC Required: I II [III] Project Specific:

Relinquished By: Date: 4/8/04 Time: 1610
Received By: Date: 4/9/04 Time: 1045
Relinquished By: Date: Time:
Received By: Date: Time:

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples