Final Biopile Sampling and First Quarter 2006 Groundwater Monitoring Report

City of Arcata Corporation Yard
Arcata, California
Case No. 1NHU767

Prepared for:

The City of Arcata

SHN Consulting Engineers & Geologists, Inc.

812 W. Wabash Avenue
Eureka, CA 95501-2138
707/441-8855

May 2006
000108.100

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • Fax 707-441-8877 • info@shn-eureka.com

Reference: 000108.100

May 15, 2006

Mr. Kim Watson, Superintendent of Public Works
City of Arcata
736 F Street
Arcata, CA 95521

Subject: Final Biopile Sampling and First Quarter 2006 Groundwater Monitoring Report, City of Arcata Corporation Yard, 600 South G Street, Arcata, California; Case No. 1NHU767

Dear Mr. Watson:

This report presents the results of the quarterly groundwater-monitoring event and the final biopile sampling at the City of Arcata, Department of Public Works' corporation yard for the first quarter of 2006. This work was performed by SHN Consulting Engineers & Geologists, Inc. in accordance with our service agreement with the City of Arcata. City of Arcata employees conducted the first quarter monitoring activities on January 18, 2006.

Also, in a letter dated April 13, 2006, Ron Allen of North Coast Regional Water Quality Board indicated that the closure of the biopile may proceed as described in the "Discussion and Recommendations" section of this report.

If you have any questions, please call me at 707/441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Mike Foget, P.E.
Project Engineer

MKF/ADM:lms
Attachment: Report
copy w/attach: Karen Diemer, City of Arcata
Ron Allen, RWQCB
Melissa Martel, HCDEH

Reference: 000108.100

Final Biopile Sampling and First Quarter 2006 Groundwater Monitoring Report

City of Arcata Corporation Yard
600 South G Street
Arcata, California

Prepared for:

The City of Arcata

Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash Avenue
Eureka, CA 95501-2138
707/441-8855

May 2006

QA/QC:MKF___

G:\2000\000108_City_of_Arcata\100_Corp_Yard\rpt\1stQ06GWM-rpt.doc

Table of Contents

		Page
1.0	Introduction	1
2.0	Field Activities	1
2.1	Monitoring Well Sampling	1
2.2	Laboratory Analytical Methods	1
2.3	Equipment Decontamination Procedures	2
2.4	Investigation-Derived Wastewater Management	2
3.0	Groundwater Monitoring Results	2
3.1	Hydrogeology	2
3.2	Groundwater Analytical Results	3
3.3	Groundwater Extraction and Treatment System	4
3.4	Air Sparge Treatment System	4
3.5	Biopile Monitoring	4
4.0	Discussion and Recommendations	6
5.0	References Cited	7

Appendices

A. Field Notes
B. Historic Monitoring Data
C. Laboratory Analytical Reports

List of Illustrations

Figures		**Follows Page**
1.	Site Location Map	1
2.	Site Plan	1
3.	Groundwater Elevations, January 18, 2006	2
4.	Summary of Groundwater Analytical Results, January 18, 2006	3

Tables		**Page**
1.	Groundwater Elevations, January 18, 2006	2
2.	Groundwater Analytical Results, January 18, 2006	3
3.	Biopile Hydrocarbon Analytical Results, April 4 & 5, 2006	5
4.	Biopile Nutrient Analytical Results, April 4 & 5, 2006	6

Abbreviations and Acronyms

<	Denotes a value that is "less than" the method detection limit
mg/kg	milligrams per kilogram
ug/g	micrograms per gram
ug/L	micrograms per Liter
% H2O	Percent Moisture
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes
DIPE	Diisopropyl Ether
EPA	(U. S.) Environmental Protection Agency
ETBE	Ethyl Tertiary-Butyl Ether
MSL	Mean Sea Level
MTBE	Methyl Tertiary-Butyl Ether
MW-#	Monitoring Well-number
NO2-N3	Nitrite as Nitrogen
NO3-N2	Nitrate as Nitrogen
RWQCB	California Regional Water Quality Board, North Coast Region
SHN	SHN Consulting Engineers & Geologists, Inc.
SW-#	(excavation pit) sidewall-number
TAME	Tertiary-Amyl Butyl Ether
TBA	Tertiary-Butyl Alcohol
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TOC	Total Organic Carbon
TPHD	Total Petroleum Hydrocarbons as Diesel
TPHG	Total Petroleum Hydrocarbons as Gasoline
TPHMO	Total Petroleum Hydrocarbons as Motor Oil
TPP	Total Phosphate Phosphorous

1.0 Introduction

This report presents the results of groundwater-monitoring activities and the final biopile sampling for the first quarter of 2006, conducted at the City of Arcata corporation yard. Under the direction of SHN Consulting Engineers & Geologists, Inc. (SHN), the City of Arcata conducted the quarterly monitoring of six groundwater wells located at their corporation yard. The site is located on South G Street adjacent to Butcher's Slough and Arcata Bay. The corporation yard houses the City of Arcata's wastewater treatment plant and the Department of Public Works' vehicle maintenance and equipment storage facilities. The site lies within Section 32 of Township 5 North, Range 1 East, Humboldt Base and Meridian (Figure 1).

First quarter 2006 monitoring activities are presented in 5 sections. This section serves as an introduction for the report. Section 2.0 describes the field program for the work conducted during this monitoring event. Section 3.0 includes a discussion of the results of the monitoring activities. Section 4.0 presents our conclusions and site recommendations. Section 5.0 includes references cited in this report.

The objective of this work was to assess groundwater conditions beneath the site over time.

2.0 Field Activities

2.1 Monitoring Well Sampling

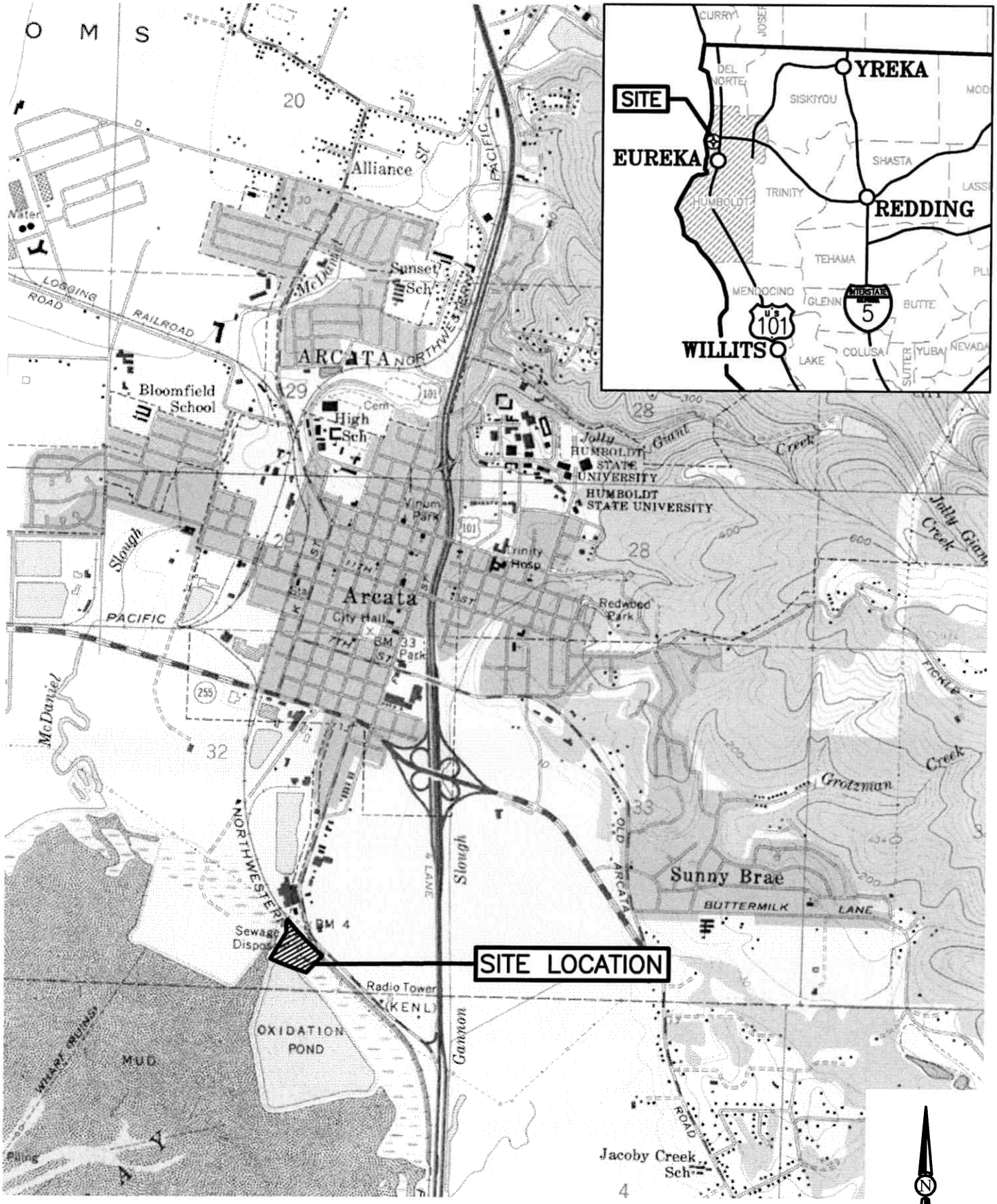
On January 18, 2006, City of Arcata personnel performed groundwater monitoring in wells MW-1 through MW-6, to aid in assessing current groundwater conditions beneath the site, including the direction of groundwater flow. A site map showing the locations of the existing monitoring wells is included as Figure 2. As part of the groundwater-monitoring program, each well was measured for depth to groundwater and sampled for water quality. During purging, each well was monitored for electrical conductivity and temperature using portable instrumentation, and pH was measured using pH test strips.

Upon completion of the well purging activities, a groundwater sample was collected from each well using a disposable polyethylene bailer, and transferred into laboratory-supplied containers. The water samples were then labeled, stored in an iced cooler, and transported to the laboratory under proper chain-of-custody documentation. Field notes from the January 18, 2006 groundwater-monitoring event are included in Appendix A.

2.2 Laboratory Analytical Methods

Each of the groundwater samples was analyzed for:

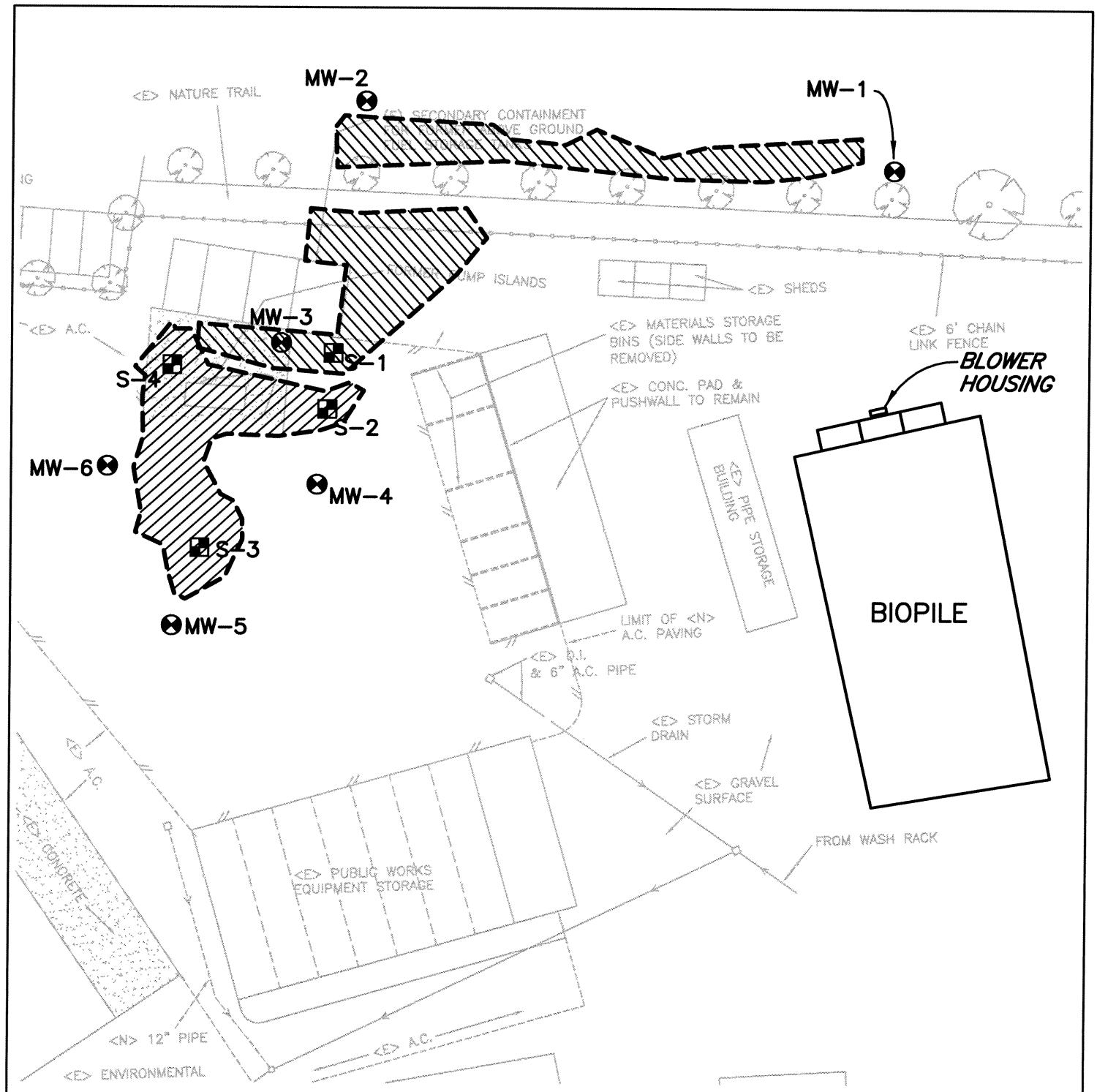
- Total Petroleum Hydrocarbons as Diesel (TPHD) with silica gel clean up in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 3510 GCFID.
- Total Petroleum Hydrocarbons as Gasoline (TPHG) and Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) in general accordance with EPA Method No. 8260B Modified.
- Fuel Oxygenates in general accordance with EPA Method No. 8260B Modified.



SOURCE: ARCATA NORTH & SOUTH USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	City of Arcata Corp. Yard 600 South G Street Arcata, California		Site Location Map SHN 000108.100
	December 2005	000108.100-VIC-MAP	Figure 1



EXPLANATION

MW-5 *MONITORING WELL LOCATION AND DESIGNATION*

S-1 *AIR SPARGE RISER LOCATION AND DESIGNATION*

LIMIT OF EXCAVATION NOVEMBER 2000

LIMIT OF EXCAVATION OCTOBER 2001

1"=40'±

0 40

SHN Consulting Engineers & Geologists, Inc.	City of Arcata Corp. Yard 600 South G Street Arcata, California	Site Plan SHN 000108.100
	December, 2005	000108.100-SI1	Figure 2

North Coast Laboratories Ltd., a state-certified analytical laboratory located in Arcata, California, performed all of the sample analyses.

2.3 Equipment Decontamination Procedures

All well purging and sampling equipment was cleaned prior to being transported to the corporation yard site. All small equipment that required on-site cleaning was decontaminated using the triple wash system. The equipment was first washed in a water solution containing Liquinox® cleaner, followed by a water rinse, then by a distilled water rinse. All of the groundwater samples were collected using pre-cleaned, disposable bailers, and transferred into laboratory-supplied containers.

2.4 Investigation-Derived Wastewater Management

Water used for decontaminating field equipment and all well purge water was placed into 5-gallon buckets, and subsequently transported to, and disposed of at, the City of Arcata wastewater treatment facility.

3.0 Groundwater Monitoring Results

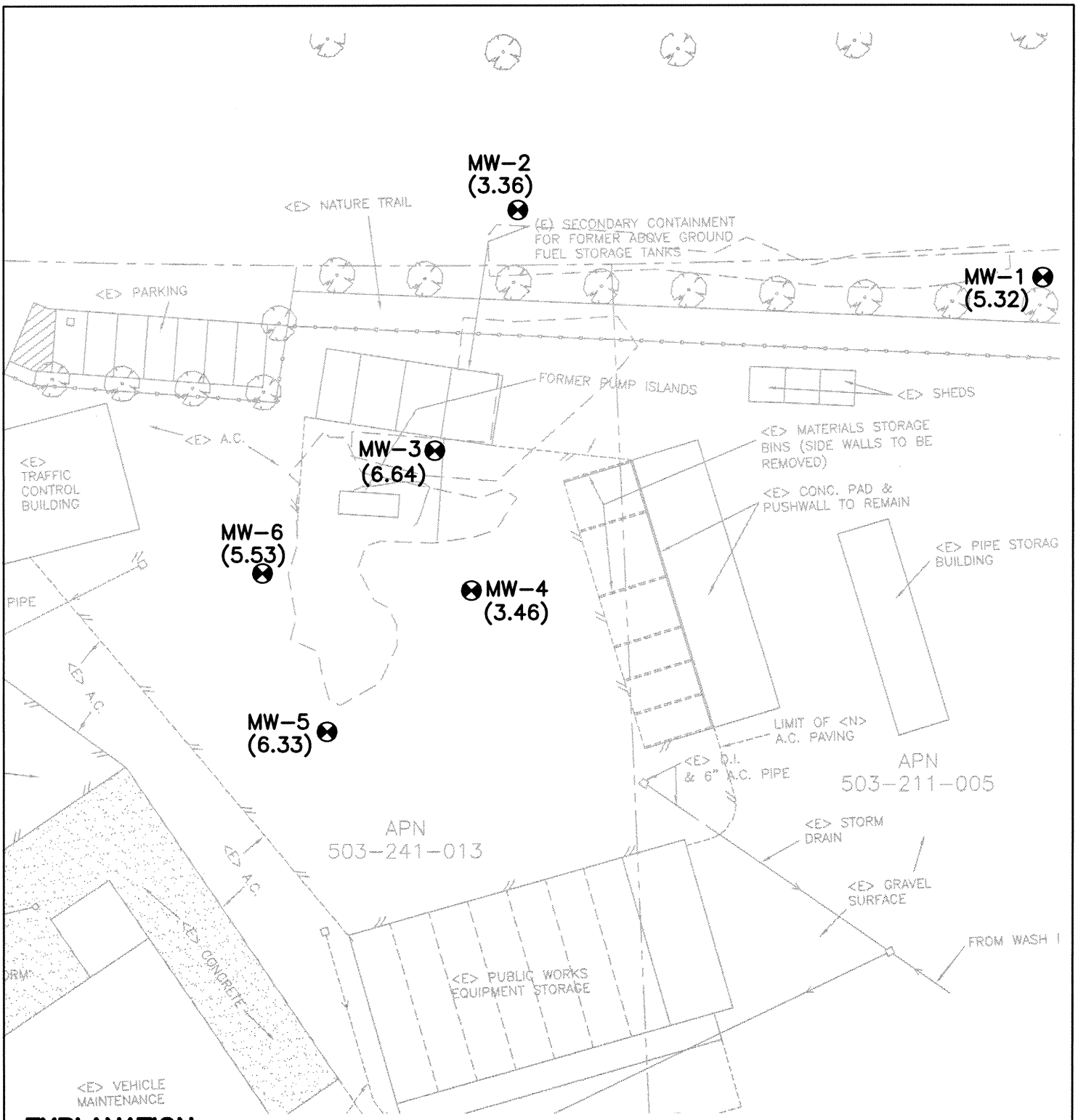
3.1 Hydrogeology

Depth-to-groundwater measurements were collected from each monitoring well prior to sampling, and are shown in Table 1. On January 18, 2006, the direction of groundwater flow beneath the site varied (Figure 3). Historical groundwater elevation data are included in Appendix B, Table B-1.

Table 1
Groundwater Elevations, January 18, 2006
City of Arcata Corporation Yard, Arcata, California

Sample Location	Top of Casing Elevation[1] (feet MSL)[2]	Depth To Water (feet)[3]	Water Surface Elevation[1] (feet MSL)
MW-1	8.73	3.41	5.32
MW-2	9.86	6.50	3.36
MW-3	6.97	0.33	6.64
MW-4	6.96	3.50	3.46
MW-5	6.83	0.50	6.33
MW-6	6.73	1.20	5.53

1. Top of casing elevation referenced to City of Arcata Bench Mark #4, elevation.
2. Mean Sea Level (MSL).
3. Depth to water in feet below top of casing.



EXPLANATION

MW-5 *MONITORING WELL LOCATION AND DESIGNATION*

(6.33) *GROUNDWATER ELEVATION (FEET MSL)*

1"=40'± 0 40

SHN Consulting Engineers & Geologists, Inc.	City of Arcata Corp. Yard 600 South G Street Arcata, California	Groundwater Elevations January 18, 2006 SHN 000108.100
	May 2006	000108-100-GWC-JAN-2006	Figure 3

3.2 Groundwater Analytical Results

The laboratory analytical results from the January 18, 2006, groundwater-monitoring event are summarized in Table 2, and shown on Figure 4.

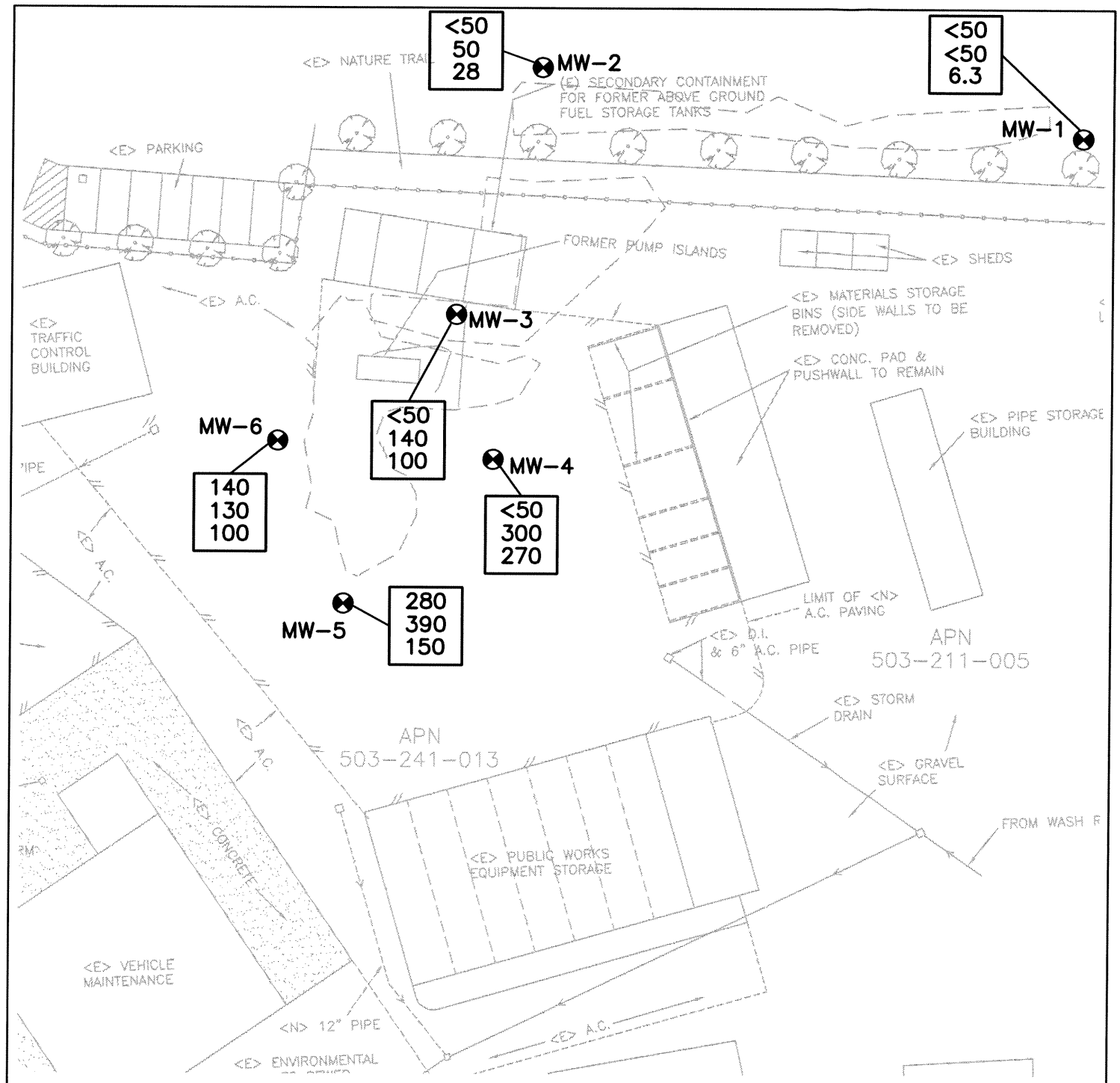
Table 2
Groundwater Analytical Results, January 18, 2006
City of Arcata Corporation Yard, Arcata, California
(in ug/L)[1]

Sample Location	TPHD[2]	TPHG[3]	B[3]	T[3]	E[3]	X[3]	MTBE[3]	TBA[3]	DIPE[3]	ETBE[3]	TAME[3]
MW-1	<50[4]	<50	<0.50	<0.50	<0.50	<1.0	**6.3**	<10	<1.0	<1.0	<1.0
MW-2	<50	**50**[5]	<0.50	<0.50	<0.50	<1.0	**28**	<10	<1.0	<1.0	**1.6**
MW-3	<50	**140**[5]	<0.50	<0.50	<0.50	<1.0	**100**	<30[6]	<1.0	<1.0	**3.3**
MW-4	<50	**300**[5]	<0.50	<0.50	<0.50	<1.0	**270**	**56**	<1.0	<1.0	**7.6**
MW-5	**280**[7]	**390**[8]	<0.50	<0.50	<0.50	<1.0	**150**	<40[6]	<1.0	<1.0	**3.9**
MW-6	**140**[9]	**130**[5]	<0.50	<0.50	<0.50	<1.0	**100**	<30[6]	<1.0	<1.0	**2.8**

1. ug/L: micrograms per liter.
2. TPHD: Total Petroleum Hydrocarbons as Diesel analyzed in general accordance with EPA Method 3510/GCFID.
3. TPHG: Total Petroleum Hydrocarbons as Gasoline; Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX); Methyl Tertiary-Butyl Ether (MTBE), Tertiary-Butyl Alcohol (TBA), Diisopropyl Ether (DIPE), Ethyl Tertiary-Butyl Ether (ETBE), and Tertiary-Amyl Butyl Ether (TAME), analyzed in general accordance with EPA Method 8260B.
4. <: Denotes a value that is " less than" the method detection limit.
5. Results are primarily from the reported gasoline additives.
6. Reporting limits were raised due to matrix interference.
7. Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.
8. Result includes the reported gasoline additives in addition to other peaks in the gasoline range.
9. Sample contains material similar to degraded or weathered diesel oil.

TPHD was detected in the groundwater samples collected from wells MW-5 and MW-6 at concentrations of 280 micrograms per liter (ug/L) and 140 ug/L, respectively. TPHG was detected in the groundwater samples collected from five of the monitoring wells, at concentrations ranging from 50 ug/L in well MW-2, to 390 ug/L in well MW-5. TPHG was not detected in the groundwater sample collected from MW-1. The analytical laboratory noted that the TPHG values observed in wells MW-2, MW-3, MW-4, and MW-6 are primarily from gasoline additives. No detectable concentrations of toluene, ethylbenzene, or total xylenes were present in any groundwater samples collected during the January 18, 2006, sampling event.

Methyl Tertiary-Butyl Ether (MTBE) was detected in groundwater samples collected form MW-1 through MW-6 during the January 18, 2006, monitoring event. Historical groundwater analytical results are presented in Appendix B, Table B-2. The complete laboratory analytical report and corresponding chain-of-custody documentation are included in Appendix C.



EXPLANATION

MW-5 — *MONITORING WELL LOCATION AND DESIGNATION*

410	*TPHD*
490	*TPHG*
160	*MTBE*

RESULTS IN ug/l

1"=40'±

0 40

SHN Consulting Engineers & Geologists, Inc.	City of Arcata Corp. Yard 600 South G Street Arcata, California		Summary of Groundwater Analytical Results, January 18, 2006 SHN 000108.100
	May 2006	000108-100-SAR-JAN-2006	Figure 4

3.3 Groundwater Extraction and Treatment System

The groundwater extraction and treatment system was operated from May 2004 to April 2005. The system extracted and treated approximately 96,000 gallons of groundwater.

3.4 Air Sparge Treatment System

On April 12, 2006, an air sparge treatment system was implemented at the site to enhance bioremediation of the groundwater. The system injects compressed air into four sparge wells located within the contamination plume (Figure 2). SHN will perform monthly operation and maintenance of the sparge system. Field notes from the system startup and initial monitoring are included in Appendix A.

3.5 Biopile Monitoring

The biopile was constructed in September 2003 and is currently monitored for blower manifold readings, soil temperature readings, and general condition observations. Field notes from the first quarter biopile monitoring are included in Appendix A.

Based on the March 2005 sampling event, it was determined that the biopile was ready for final confirmation sampling to meet the requirements to spread the soil On April 4 and April 5, 2006, SHN collected soil samples from varying depths throughout the biopile.

SHN collected 4 samples for every 100 cubic yards of soil, and the analytical laboratory composited each set of four samples into one for analysis. Using the approximate 1,000 cubic yard volume of the biopile, 10-four point composite samples were analyzed. Soil samples were analyzed for TPH as Motor Oil (TPHMO), TPHD, TPHG, BTEX, and MTBE, as well as several nutrients that are required for plant growth. The residual hydrocarbon concentrations of the pile are shown in Table 3, and nutrient concentrations are shown in Table 4. A summary of results from biopile soil samples is included in Appendix B, Table B-3.

TPHD was detected in all of the composited samples, with concentrations ranging from 20 to 62 micrograms per liter (ug/g). TPHMO was detected in five out of ten composite samples, with concentrations ranging from 110 to 150 ug/g. Toluene was detected in one sample, with a concentration of 0.0067 ug/g. Xylenes were detected in eight out of ten samples, with concentrations ranging from 0.0068 to 0.0143 ug/g.

Nitrate-Nitrogen concentrations ranged from 23 to 62 ug/g, while Nitrite-Nitrogen was not detected in any samples. Percent moisture ranged from 10 to 13 ug/g. Total Kjeldahl Nitrogen concentrations ranged from 610 to 670 ug/g, and Total Nitrogen concentrations ranged from 650 to 700 ug/g. Total Phosphate Phosphorous concentrations ranged from 11 to 15 ug/g. Total Organic Carbon content ranged from 13,800 to 18,300 milligrams per kilogram (mg/kg).

Table 3
Biopile Hydrocarbon Analytical Results, April 4 & 5, 2006
City of Arcata Corporation Yard, Arcata, California
(in ug/g)[1]

Sample Location	TPHD[2]	TPHMO[3]	TPHG[4]	B[5]	T[5]	E[5]	X[5]	MTBE[5]
BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' COMP	**30[6]**	**110[7]**	<1.0	<0.0050	<0.0050	<0.0050	**0.0143**	<0.050
BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' COMP	**30[6]**	**120[7]**	<1.0	<0.0050	<0.0050	<0.0050	**0.0069**	<0.050
BP-9@3'/BP-10@4'/BP-11@4'/BP-12@6' CO	**55[6]**	**150[7]**	<1.0	<0.0050	<0.0050	<0.0050	**0.0072**	<0.050
BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' C	**37[6]**	<100[8]	<1.0	<0.0050	<0.0050	<0.0050	**0.0068**	<0.050
BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' C	**46[6]**	<100[8]	<1.0	<0.0050	<0.0050	<0.0050	**0.0068**	<0.050
BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' C	**62[6]**	**110[7]**	<1.0	<0.0050	<0.0050	<0.0050	**0.0072**	<0.050
BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' C	**20[6]**	**120[7]**	<1.0	<0.0050	**0.0067**	<0.0050	**0.0080**	<0.050
BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2' C	**26[6]**	<100[8]	<1.0	<0.0050	<0.0050	<0.0050	<0.010	<0.050
BP-33@2'/BP-34@4'/BP-35@5'/BP-36@6' C	**23[6]**	<100[8]	<1.0	<0.0050	<0.0050	<0.0050	<0.010	<0.050
BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' C	**28[6]**	<100[8]	<1.0	<0.0050	<0.0050	<0.0050	**0.0083**	<0.050

1. ug/g: micrograms per gram.
2. TPHD: Total Petroleum Hydrocarbons as Diesel analyzed in general accordance with EPA Method 3550/GCFID/EPA 8015B.
3. TPHMO: Total Petroleum Hydrocarbons as Motor Oil analyzed in general accordance with EPA Method 3550/GCFID/EPA 8015B.
4. TPHG: Total Petroleum Hydrocarbons as Gasoline analyzed in general accordance with EPA Method 5035/GCFID/EPA 8015B.
5. Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX); Methyl Tertiary-Butyl Ether (MTBE), analyzed in general accordance with EPA Method 5035/8021B.
6. Sample contains material similar to degraded or weathered diesel oil.
7. Samples do not have the typical pattern of fresh motor oil; results reported represent the amount of material in the motor oil range.
8. Motor oil is reported as not detected with a dilution due to matrix interference.

Table 4 Biopile Nutrient Analytical Results, April 4 & 5, 2006 City of Arcata Corporation Yard, Arcata, California (in ug/g)[1] (unless otherwise noted)							
Sample Location	**NO_3-N[2]**	**NO_2-N[3]**	**% H_2O[4]**	**TKN[5]**	**TN[6]**	**TPP[7]**	**TOC[8] (mg/kg)[9]**
BP-1,5,9,13,17,21,25,29,33,37 COMP	**38**	<1.0	**10**	**650**	**690**	**15**	**18,300**
BP-2,6,10,14,18,22,26,30,34,38 COMP	**43**	<1.0	**12**	**610**	**650**	**11**	**16,100**
BP-3,7,11,15,19,23,27,31,35,39 COMP	**25**	<1.0	**12**	**640**	**660**	**13**	**13,800**
BP-4,8,12,16,20,24,28,32,36,40 COMP	**30**	<1.0	**13**	**670**	**700**	**14**	**15,600**

1. ug/g: micrograms per gram.
2. NO3-N2: Nitrate as Nitrogen analyzed in general accordance with EPA Method 300.0 Modified.
3. NO2-N3: Nitrite as Nitrogen analyzed in general accordance with EPA Method 300.0 Modified.
4. % H2O: Percent Moisture analyzed in general accordance with Standard Methods 2540G Modified.
5. TKN: Total Kjeldahl Nitrogen analyzed in general accordance with EPA Method 351.4 Modified.
6. TN: Total Nitrogen analyzed in general accordance with Standard Methods 4500-N.
7. TPP: Total Phosphate Phosphorous analyzed in general accordance with EPA Method 365.2 Modified.
8. TOC: Total Organic Carbon analyzed in general accordance with EPA Method 9060.
9. mg/kg: milligrams per kilogram.

4.0 Discussion and Recommendations

The results of this quarterly monitoring program indicate that groundwater at the corporation yard site has been impacted by petroleum hydrocarbons and fuel oxygenates. The groundwater extraction and treatment system was taken off line in April 2005. SHN conducted an air sparge pilot test on April 29, 2005, using the existing groundwater extraction piping located at the base of the October 2001 excavation pit (SW-1). Results of the pilot test were presented in a report of findings (SHN, May 2005). On April 13, 2006, SHN replaced the extraction and treatment system with an air sparging system that is currently operational.

Based on the reduction of TPHG and TPHD concentrations in the biopile soil, SHN recommended closure for the biopile in the fourth quarter 2005 monitoring report. SHN also recommended that the biopile soil be moved to a 30,000-square foot area located west of marsh #3 at the Arcata Corp Yard site. There it will be spread out, mulched, seeded, and fertilized to promote final treatment by means of phyto-remediation and reduce any erosion of soils (SHN, December 2005).

In a letter dated April 13, 2006, Ron Allen, Environmental Scientist for the California Regional Water Quality Board, North Coast Region (RWQCB), indicated that plans for relocation of the material contained in the biopile to an area located west of Marsh #3 could proceed forward. Mr. Allen also indicated that the RWQCB requires latitudes and longitudes (within one meter resolution) to define the exact location where the biopile will be spread, and that the soil should be mulched, seeded, and fertilized to promote final treatment by phytoremediation. Details regarding the relocation of the soil and coordinates of the location will be provided in a future report.

5.0 References Cited

SHN Consulting Engineers & Geologists, Inc. (May 2005). *Remedial Action Pilot Study, Report of Findings, City of Arcata Corporation Yard, 600 South G Street, Arcata, California.* Eureka: SHN.

---. (December 16, 2005). *Quarterly Groundwater Monitoring Report Third Quarter 2005, City of Arcata Corporation Yard, Arcata, California, Case No. 1NHU767.* Eureka: SHN.

Appendix A

Field Notes

01/18/06

WELL NO. MW-1
TOTAL DEPTH 17.80
DEPTH TO WATER 3.41

ELEVATION
WATER ELEVATION

HT OF WATER COLUMN 14.39 X(0.16) CASING VOL 2.3X3= 6.9 gal

DEPTH	TIME	TIME	WATER REMOVED	EC ppm	TEMP C	pH
		9:30	0			
		10:00	2 gal	8.74	14.7	6.64
		10:10	4 gal	621	12.7	6.21
		10:20	7 gal	665	12.2	6.13

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT DISPOSABLE BAILER
SAMPLE TIME
SAMPLE ANALYSIS 8260 LIST A; TPHD
LABORATORY N.C.L.
REMARKS

01/18/06

WELL NO. MW-2
TOTAL DEPTH 18.35
DEPTH TO WATER 6.50

ELEVATION
WATER ELEVATION

HT OF WATER COLUMN 11.85 X(0.16) CASING VOL 1.90X3=5.69 gal

DEPTH	TIME	TIME	WATER REMOVED	EC PPM	TEMP C	pH
		10:30	0			
		10:35	2 gal	1337	12.5	6.24
		10:40	4 gal	1123	12.9	6.43
		10:45	6 gal	1449	12.6	6.35

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT DISPOSABLE BAILER
SAMPLE TIME
SAMPLE ANALYSIS 8260 LIST 1; TPHD
LABORATORY N.C.L.
REMARKS

01/18/06

WELL NO. MW-3
TOTAL DEPTH 14.70
DEPTH TO WATER .33

ELEVATION
WATER ELEVATION

HT OF WATER COLUMN 14.37 X(0.16) CASING VOL 2.30 X 3 = 6.9 gal

DEPTH	TIME	TIME	WATER REMOVED	EC ppm	TEMP C	pH
		11:30	0			
		11:35	2.25 gal	1106	13.3	6.60
		11:40	4.50 gal	1041	12.5	6.60
		11:45	6.75 gal	1073	12.5	6.61

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT DISPOSABLE BAILER
SAMPLE TIME
SAMPLE ANALYSIS 8260 LIST 1 ; TPHD
LABORATORY N.C.L.
REMARKS

01/18/06

WELL NO. MW-4
TOTAL DEPTH 14.70
DEPTH TO WATER 3.50

ELEVATION
WATER ELEVATION

HT OF WATER COLUMN 11.20 X(0.16) CASING VOL 1.79 X 3 = 5.3 gal

DEPTH	TIME	TIME	WATER REMOVED	EC ppm	TEMP C	pH
		10:50	0			
		10:55	1.5 gal	2000 +	12.4	6.33
		11:00	3.0 gal	2000 +	12.6	6.34
		11:05	5.25 gal	2000 +	12.9	6.37

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT Disposable Bailers
SAMPLE TIME
SAMPLE ANALYSIS 8260 List 1; TPHD
LABORATORY N.C.L.
REMARKS

01/18/06

WELL NO. MW-5
TOTAL DEPTH 14.85
DEPTH TO WATER .50

ELEVATION
WATER ELEVATION

HT OF WATER COLUMN 14.35 X(0.16) CASING VOL 2.30X3= 6.89 gal

DEPTH	TIME	TIME	WATER REMOVED	EC PPm	TEMP C	pH
		11:40	0			
		11:45	2 gal	1236	12.3	6.10
		11:50	4.5 gal	1145	12.2	6.09
		11:55	6.75 gal	1156	12.2	6.04

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT DISPOSABLE BAILER
SAMPLE TIME
SAMPLE ANALYSIS 8260 LIST 1 ; TPHD
LABORATORY N.E.L.
REMARKS

WELL NO. MW-6

TOTAL DEPTH 14.75

DEPTH TO WATER 1.20

ELEVATION

WATER ELEVATION

01/18/06

HT OF WATER COLUMN 13.55 X(0.16) CASING VOL 2.17X3=6.5 gal

DEPTH	TIME	TIME	WATER REMOVED	EC PPM	TEMP C	pH
		11:10	0			
		11:15	2 gal	987	12.1	6.46
		11:20	4 gal	1089	12.4	6.64
		11:25	6 gal	1136	12.8	6.50

TOTAL INITIAL WATER VOLUME

SAMPLING EQUIPMENT DISPOSABLE BAILER

SAMPLE TIME

SAMPLE ANALYSIS 8260 LIST 1; TPHD

LABORATORY N.C.L.

REMARKS

Monthly Monitoring
City of Arcata, Corp Yard
000108.100

Technician:	Date:	Time:
DCT	1/6/06	1447

Weather Conditions:	Ambient Air Temperature:
Over Cast	N/A

Time Settings Before Adjustments:	Time Settings After Adjustments:
Blower "A": ON from 8 Am to 4 pm	Blower "A": ON from_____ to_____
Blower "B": ON from 8 am to 4pm	Blower "B": ON from_____ to_____

Blower "A" Manifold Readings:	Blower "B" Manifold Readings:
Line Temperature: 60° °F	Line Temperature: 60° °F
Line Pressure: 6 in-H_2O	Line Pressure: N/A in-H_2O

Air Velocity (Line 1)	Air Velocity (Line 2)	Air Velocity (Line 3)	Air Velocity (Line 4)
940 ft/min	1880 ft/min	2120 ft/min	2260 ft/min

Soil Vapor Readings:	Gas Meter Used:	Gas Meter Calibration:

Sample Port	VOC's (ppm)	O_2 (%)	CO_2 (%)
#1			
#2			
#3			
#4			
#5			

Soil Temperature Readings:

#1	#2	#3	#4
N/A °F	N/A °F	58° °F	63° °F

Condition of Bio-Pile Cover: 75% off of pile

Condition of Cover Hold-Downs:

Additional Observations:

Monthly Monitoring
City of Arcata, Corp Yard
000108.100

Technician:	Date:	Time:
DCT	2/17/06	1420

Weather Conditions: Clear

Ambient Air Temperature:

Time Settings Before Adjustments:	Time Settings After Adjustments:
Blower "A": ON from 8am to 4pm	Blower "A": ON from_____ to_____
Blower "B": ON from 8am to 4pm	Blower "B": ON from_____ to_____

Blower "A" Manifold Readings:	Blower "B" Manifold Readings:
Line Temperature: 60° °F	Line Temperature: 60° °F
Line Pressure: 5.5 in-H_2O	Line Pressure: N/A in-H_2O

Air Velocity (Line 1)	Air Velocity (Line 2)	Air Velocity (Line 3)	Air Velocity (Line 4)
1130 ft/min	1750 ft/min	2130 ft/min	2125 ft/min

Soil Vapor Readings:	Gas Meter Used:	Gas Meter Calibration:

Sample Port	VOC's (ppm)	O_2 (%)	CO_2 (%)
#1			
#2			
#3			
#4			
#5			

Soil Temperature Readings:

#1	#2	#3	#4
56° °F	50° °F	N/A °F	N/A °F

Condition of Bio-Pile Cover: Good, Has been recovered.

Condition of Cover Hold-Downs: Good

Additional Observations:

Monthly Monitoring
City of Arcata, Corp Yard
000108.100

Technician:	Date:	Time:
Dustin Tibbets	3/17/06	1130

Weather Conditions:

Ambient Air Temperature:

Time Settings Before Adjustments:

Blower "A": ON from 8 Am to 4 pm

Blower "B": ON from 8 Am to 4 pm

Time Settings After Adjustments:

Blower "A": ON from_____ to_____

Blower "B": ON from_____ to_____

Blower "A" Manifold Readings:	Blower "B" Manifold Readings:
Line Temperature: ~~80~~ 60° °F	Line Temperature: 60° °F
Line Pressure: 7.5 in-H_2O	Line Pressure: N/A in-H_2O

Air Velocity (Line 1)	Air Velocity (Line 2)	Air Velocity (Line 3)	Air Velocity (Line 4)
820 ~~50°~~ ft/min	~~52°~~ 1075 ft/min	~~N/A~~ 2200 ft/min	~~N/A~~ 2280 ft/min

Soil Vapor Readings:	Gas Meter Used:	Gas Meter Calibration:

Sample Port	VOC's (ppm)	O_2 (%)	CO_2 (%)
#1			
#2			
#3			
#4			
#5			

Soil Temperature Readings:

#1	#2	#3	#4
50° °F	52° °F	N/A °F	N/A °F

Condition of Bio-Pile Cover:

Condition of Cover Hold-Downs:

Additional Observations: Need new psi relief valve on system A

CONSULTING ENGINEERS & GEOLOGISTS, INC.
480 Hemsted Drive • Redding, CA 96002• Tel: 530.221.5424 • FAX: 530.221.0135 •E-mail: shninfo@shn-redding.com
812 W. Wabash • Eureka, CA 95501 • Tel: 707.441.8855 • FAX: 707.441.8877 •E-mail: shninfo@shn-engr.com

DAILY FIELD REPORT

JOB NO 000 108.100

Page 1 of 1

PROJECT NAME: Arcata Corp Yard	CLIENT/OWNER	DAILY FIELD REPORT SEQUENCE NO	
GENERAL LOCATION OF WORK: Arcata, CA	OWNER/CLIENT REPRESENTATIVE	DATE: 4-4,5-06	DAY OF WEEK: TUE + WEDS
TYPE OF WORK: Soil sampling of biopile	WEATHER: overcast - ptly cldy	PROJECT ENGINEER/ SUPERVISOR: M. Foget	
SOURCE & DESCRIPTION OF FILL MATERIAL	KEY PERSONS CONTACTED	TECHNICIAN: A. McLeady + P. Dunn + E. Ward (4-4-06)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

(4-4)

0800 Arrive on site, P. Dunn already there, had safety meeting + reviewed scope of work, setup decon station, marked boring locations with white paint on tarp

0900 Begin hand augering BP-1 w/ stainless steel auger. Obtained grab samples at specified depths, deconning auger between boring locations. Borings backfilled with cuttings. E. Ward on site to help.

1630 Off site - 27 total borings total for day.

(4-5-06)

0800 Arrive on site, P. Dunn already on site, set up as 4-4-06.

0830 Begin BP-28.

1200 Off site. 40 total borings for both days - see map + COC.

biopile

37	33	29	25	21	17	13	9	5	1
38	34	30	26	22	18	14	10	6	2
39	35	31	27	23	19	15	11	7	3
40	36	32	28	24	20	16	12	8	4

blower shed

Nomenclature: BP-1 @ 1'
" -2 @ 2' " "
BP-7 @ 1' " "
BP-12 @ 6' " " etc.
BP-40 @ 4'

- Soil samples to NCL for analysis (see COC)

≈ 8 gallons total to SHN PWST @ 812 W. Wabash.

COPY GIVEN TO:

REPORTED BY: Ann D. Foget

K:\Forms\Field Forms\Daily Field Report.doc

Arcata Corp. Yard
Sparge System Monitoring Sheet
000108.100

Date: 4-13-06 Time: 4:00
Performed By: P. Dunn & C. Fisher Weather: Clear

Hour Meter: 012 hours

S-1	Initial	% Closed (final)	Final
Valve Position (% open)	flow velo 5300	78	2400; 2400; 2400

S-2	Initial		Final
Valve Position (% open)	340	100	2800; 2700; 2700

S-3	Initial		Final
Valve Position (% open)	3000	70	2050; 2200; 2300

S-4	Initial		Final
Valve Position (% open)	500	60	2400; 2400

Manifold Readings	Initial	Final
Vacuum	-8" H_2O	-6" H_2O
Temperature (°F)		110
Pressure ~~(psig)~~ in H_2O	33"	44
Flow Rate (scfm)	7800	9300

Comments: Initial Start up - checked motor rotation - OK
Wiring in control box needs adjustment
Monitoring well response

well	Pressure (" H_2O)		
MW 3	0	-1.6	-1.6
MW 4	0	-0.12	-0.08
MW 5	0	0.18	0.29
MW 6	0	0.05	0.05

Arcata Corp. Yard
Air Sparge System Monitoring Sheet
000108.100

Date: 4-25-06 Time: 8:00
Performed By: Peter Dunn Weather: Cloudy

Hour Meter: 280.1 hours

S-1	Initial	Final
Valve Position (% open)	50	40
Flow Velocity (cfm)	2730	2100
S-2	**Initial**	**Final**
Valve Position (% open)	100	75
Flow Velocity (cfm)	2025	2200
S-3	**Initial**	**Final**
Valve Position (% open)	50	40
Flow Velocity (cfm)	2875	2150
S-4	**Initial**	**Final**
Valve Position (% open)	50	50
Flow Velocity (cfm)	1930	2200

Manifold Readings	Initial	Final
Vacuum	-6	-6
Temperature (°F)	102	102
Pressure (psig)	47	50
Flow ~~Rate (scfm)~~ Velocity (fpm)	7800	7950

Comments:

SHN ENGINEERS & GEOLOGISTS
812 W. Wabash Ave.
Eureka, CA 95501-2138
Tel. 707 / 441-8855
Fax: 707 / 441-8877

JOB 000108.100 - Arcata Loop Yard
SHEET NO. 1 OF 1
~~CALCULATED BY~~ date: 14th Apr '06 ~~DATE~~ by: C. Fisher
CHECKED BY _____ DATE _____
SCALE _____

Field Notes

- Pressure = 42 in H_2O
- Vacuum = 7 in H_2O
- Temp = 100 °F
- Main Flow = 8500 fpm
- Hours = 16.8 hours

- Flows S1 = 2300 fpm
  S2 = 2500 fpm } Valves Partially Closed
  S3 = 2600 fpm
  S4 = 2100 fpm

- Power Draw
  ↳ 9.2 Amps @ 220 VAC

Independent Business Forms Inc.
(530) 221-0611, FAX (530) 221-6671, (800) 729-3700

Appendix B

Historic Monitoring Data

Table B-1
Historical Groundwater Elevations
City of Arcata Corporation Yard, Arcata, CA

Sample Location	Sample Date	Top of Casing Elevation[1] (feet MSL)[2]	Depth to Water (feet)[3]	Groundwater Elevation (feet MSL)
MW-1	9/26/2002	8.73	7.73	1.00
	1/22/2003		5.79	2.94
	4/23/2003		5.33	3.40
	7/23/2003		6.60	2.13
	10/22/2003		7.34	1.39
	1/21/2004		3.90	4.83
	4/21/2004		3.81	4.92
	7/21/2004		5.72	3.01
	10/7/2004		7.33	1.40
	1/19/2005		5.80	2.93
	4/20/2005		4.73	4.00
	7/20/2005		5.35	3.38
	10/19/2005		6.94	1.79
	1/18/2006		3.41	5.32
MW-2	9/27/2002	9.86	8.82	1.04
	1/22/2003		6.44	3.42
	4/23/2003		9.38	0.48
	7/23/2003		8.90	0.96
	10/22/2003		8.70	1.16
	1/21/2004		7.38	2.48
	4/21/2004		9.53	0.33
	7/21/2004		8.10	1.76
	10/7/2004		8.76	1.10
	1/19/2005		9.00	0.86
	4/20/2005		8.72	1.14
	7/20/2005		8.70	1.16
	10/19/2005		8.26	1.60
	1/18/2006		6.50	3.36
MW-3	9/26/2002	6.97	2.84	4.13
	1/22/2003		1.36	5.61
	4/23/2003		1.11	5.86
	7/23/2003		2.50	4.47
	10/22/2003		2.81	4.16
	1/21/2004		3.27	3.70
	4/21/2004		1.00	5.97
	7/21/2004		2.95	4.02
	10/7/2004		3.59	3.38
	1/19/2005		1.45	5.52
	4/20/2005		1.02	5.95
	7/20/2005		2.10	4.87
	10/19/2005		2.60	-2.60
	1/18/2006		0.33	6.64

Table B-1
Historical Groundwater Elevations
City of Arcata Corporation Yard, Arcata, CA

Sample Location	Sample Date	Top of Casing Elevation[1] (feet MSL)[2]	Depth to Water (feet)[3]	Groundwater Elevation (feet MSL)
MW-4	9/27/2002	6.96	4.01	2.95
	1/22/2003		2.36	4.60
	4/23/2003		2.35	4.61
	7/23/2003		2.50	4.46
	10/22/2003		4.34	2.62
	1/21/2004		1.26	5.70
	4/21/2004		3.67	3.29
	7/21/2004		5.20	1.76
	10/7/2004		4.15	2.81
	1/19/2005		3.75	3.21
	4/20/2005		3.52	3.44
	7/20/2005		2.00	4.96
	10/19/2005		4.24	2.72
	1/18/2006		3.50	3.46
MW-5	9/26/2002	6.83	2.70	4.13
	1/22/2003		1.24	5.59
	4/23/2003		1.05	5.78
	7/23/2003		2.30	4.53
	10/22/2003		2.68	4.15
	1/21/2004		1.18	5.65
	4/21/2004		0.50	6.33
	7/21/2004		3.80	3.03
	10/7/2004		2.95	3.88
	1/19/2005		1.41	5.42
	4/20/2005		1.05	5.78
	7/20/2005		1.90	4.93
	10/19/2005		2.45	4.38
	1/18/2006		0.50	6.33
MW-6	9/27/2002	6.73	5.11	1.62
	1/22/2003		3.23	3.50
	4/23/2003		1.91	4.82
	7/23/2003		5.60	1.13
	10/22/2003		3.75	2.98
	1/21/2004		1.71	5.02
	4/21/2004		5.65	1.08
	7/21/2004		2.70	4.03
	10/7/2004		3.16	3.57
	1/19/2005		1.80	4.93
	4/20/2005		1.00	5.73
	7/20/2005		1.70	5.03
	10/19/2005		2.96	3.77
	1/18/2006		1.20	5.53

1. Top of casing elevation referenced to City of Arcata Bench Mark #4, elevation
2. Mean Sea Level (MSL).
3. Below Top of Casing

Table B-2
Historical Groundwater Analytical Results
City of Arcata Corporation Yard, Arcata, CA
(in ug/L)[1]

Sample Location	Date	TPHD[2]	TPHG[3]	B[3]	T[3]	E[3]	X[3]	MTBE[3]	TBA[3]	DIPE[3]	ETBE[3]	TAME[3]
MW-1	9/26/2002	<50[4]	<50	<0.50	<0.50	<0.50	<0.50	**4.3**	<20	<1.0	<1.0	<1.0
	1/22/2003	<50	<50	<0.50	<0.50	<0.50	<0.50	**34**	<20	<1.0	<1.0	**1.3**
	4/23/2003	<50	<50	<0.50	<0.50	<0.50	<0.50	**21**	<20	<1.0	<1.0	**1.1**
	7/23/2003	<50	**76**	<0.50	<0.50	<0.50	<0.50	**100**	<20	<1.0	<1.0	**4.4**
	10/22/2003	<50	**75**	<0.50	<0.50	<0.50	<0.50	**35**	<20	<1.0	<1.0	**1.6**
	1/21/2004	<50	<50	<0.50	<0.50	<0.50	<0.50	**5**	<20	<1.0	<1.0	<1.0
	4/21/2004	<50	<50	<0.50	<0.50	<0.50	<0.50	**9.1**	<10	<1.0	<1.0	<1.0
	7/21/2004	<50	<50	<0.50	<0.50	<0.50	<0.50	**31**	<10	<1.0	<1.0	**1.1**
	10/7/2004	<50	<50	<0.50	<0.50	<0.50	<1.0	**20**	<10	<1.0	<1.0	<1.0
	1/19/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**4.6**	<10	<1.0	<1.0	<1.0
	4/20/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**5.9**	<10	<1.0	<1.0	<1.0
	7/20/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**14**	<10	<1.0	<1.0	<1.0
	10/19/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**15**	<10	<1.0	<1.0	<1.0
	1/18/2006	<50	<50	<0.50	<0.50	<0.50	<1.0	**6.3**	<10	<1.0	<1.0	<1.0
MW-2	9/27/2002	**820**	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0
	1/22/2003	<50	**72**	<0.50	<0.50	<0.50	<0.50	**130**	<20	<1.0	<1.0	**9.8**
	4/23/2003	<50	<50	<0.50	<0.50	<0.50	<0.50	**57**	<20	<1.0	<1.0	**3.5**
	7/23/2003	<50	**52**	<0.50	<0.50	<0.50	<0.50	**59**	<20	<1.0	<1.0	**3.4**
	10/22/2003	<50	**64**	<0.50	<0.50	<0.50	<0.50	**37**	<20	<1.0	<1.0	**2.2**
	1/21/2004	<50	**83**	<0.50	<0.50	<0.50	<0.50	**61**	<20	<1.0	<1.0	**3.8**
	4/21/2004	<50	<50	<0.50	<0.50	<0.50	<0.50	**22**	<10	<1.0	<1.0	**1.5**
	7/21/2004	<50	<50	<0.50	<0.50	<0.50	<0.50	**24**	<10	<1.0	<1.0	**1.5**
	10/7/2004	<50	<50	<0.50	<0.50	<0.50	<1.0	**26**	<10	<1.0	<1.0	**1.5**
	1/19/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**33**	<10	<1.0	<1.0	**1.7**
	4/20/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**31**	<10	<1.0	<1.0	**1.8**
	7/20/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**22**	<10	<1.0	<1.0	**1.3**
	10/19/2005	<50	<50	<0.50	<0.50	<0.50	<1.0	**16**	<10	<1.0	<1.0	**1.1**
	1/18/2006	<50	**50**	<0.50	<0.50	<0.50	<1.0	**28**	<10	<1.0	<1.0	**1.6**
MW-3	9/26/2002	<50	**990**	**63**	<0.50	<0.50	<0.50	**860**	**58**	<1.0	<1.0	**55**
	1/22/2003	**220**	**1,600**	**110**	**13**	**41**	**50.9**	**990**	**250**	<1.0	<1.0	**75**
	4/23/2003	**150**	**660**	**55**	**1.1**	**3**	**1.5**	**720**	**82**	<1.0	<1.0	**48**
	7/23/2003	**83**	**210**	**120**	<0.50	<0.50	<0.50	**530**	**94**	<1.0	<1.0	**11**
	10/22/2003	**330**	**720**	**26**	<0.50	<0.50	<0.50	**570**	**32**	<1.0	<1.0	**32**
	1/21/2004	**78**	**740**	**58**	**5.7**	**17**	**8.2**	**310**	<90	<1.0	<1.0	**25**
	4/21/2004	<50	**360**	**77**	**1.4**	**1.7**	**0.88**	**120**	<28	<1.0	<1.0	**7.2**
	7/21/2004	**130**	**260**	<0.50	<0.50	<0.50	<0.50	**280**	**43**	<1.0	<1.0	**9.7**
	10/7/2004	**57**	**640**	1.6	<0.50	<0.50	<1.0	**450**	**64**	<1.0	<1.0	**28**
	1/19/2005	<50	**120**	1.5	<0.50	<0.50	<1.0	**110**	<45	<1.0	<1.0	**4**
	4/20/2005	<50	**67**	**0.59**	<0.50	<0.50	<1.0	**65**	<15	<1.0	<1.0	**2**
	7/20/2005	<50	**200**	<0.50	<0.50	<0.50	<1.0	**220**	<50	<1.0	<1.0	**7.6**
	10/19/2005	<50	**190**	1.1	<0.50	<0.50	<1.0	**85**	<30	<1.0	<1.0	**6.2**
	1/18/2006	<50	**140**	<0.50	<0.50	<0.50	<1.0	**100**	<30	<1.0	<1.0	**3.3**

Table B-2
Historical Groundwater Analytical Results
City of Arcata Corporation Yard, Arcata, CA
(in ug/L)[1]

Sample Location	Date	TPHD[2]	TPHG[3]	B[3]	T[3]	E[3]	X[3]	MTBE[3]	TBA[3]	DIPE[3]	ETBE[3]	TAME[3]
MW-4	9/27/2002	<50	270	<0.50	<0.50	<0.50	<0.50	270	32	<1.0	<1.0	6.2
	1/22/2003	150	250	<0.50	<0.50	<0.50	<0.50	340	170	<1.0	<1.0	13
	4/23/2003	110	520	<0.50	<0.50	<0.50	<0.50	350	160	<1.0	<1.0	11
	7/23/2003	<50	1,000	160	3	0.78	4.1	330	66	<1.0	<1.0	41
	10/22/2003	130	290	<0.50	<0.50	<0.50	<0.50	260	62	<1.0	<1.0	6.5
	1/21/2004	97	550	<0.50	<0.50	<0.50	<0.50	580	190	<1.0	<1.0	16
	4/21/2004	<50	480	<0.50	<0.50	<0.50	<0.50	490	130	<1.0	<1.0	15
	7/21/2004	140	380	25	<0.50	<0.50	<0.50	500	29	<1.0	<1.0	22
	10/7/2004	<50	440	<0.50	<0.50	<0.50	<1.0	380	110	<1.0	<1.0	8.5
	1/19/2005	<50	410	<0.50	<0.50	<0.50	<1.0	380	<10	<1.0	<1.0	12
	4/20/2005	<50	320	<0.50	<0.50	<0.50	<1.0	370	<100	<1.0	<1.0	12
	7/20/2005	<50	370	<0.50	<0.50	<0.50	<1.0	380	95	<1.0	<1.0	11
	10/19/2005	<50	350	<0.50	<0.50	<0.50	<1.0	230	86	<1.0	<1.0	7.9
	1/18/2006	<50	300	<0.50	<0.50	<0.50	<1.0	270	56	<1.0	<1.0	7.6
MW-5	9/26/2002	160	750	<0.50	<0.50	<0.50	<0.50	490	66	<1.0	<1.0	12
	1/22/2003	1,300	590	<0.50	0.87	<0.50	<0.50	330	160	<1.0	<1.0	13
	4/23/2003	1,100	520	<0.50	<0.50	<0.50	<0.50	280	56	<1.0	<1.0	8.1
	7/23/2003	930	150	<0.50	<0.50	<0.50	<0.50	300	35	<1.0	<1.0	6.2
	10/22/2003	3,400	780	<0.50	<0.50	<0.50	<0.50	320	41	<1.0	<1.0	7.7
	1/21/2004	810	610	<0.50	<0.50	<0.50	<0.50	300	<120	<1.0	<1.0	8.2
	4/21/2004	180	430	<0.50	<0.50	<0.50	<0.50	200	<60	<1.0	<1.0	6.2
	7/21/2004	50	320	<0.50	<0.50	<0.50	<0.50	420	110	<1.0	<1.0	12
	10/7/2004	610	780	<0.50	<0.50	<0.50	<1.0	290	57	<1.0	<1.0	7.2
	1/19/2005	440	530	<0.50	<0.50	<0.50	<1.0	240	<90	<1.0	<1.0	6
	4/20/2005	120	210	<0.50	<0.50	<0.50	<1.0	160	<30	<1.0	<1.0	5.3
	7/20/2005	880	550	<0.50	<0.50	<0.50	<1.0	230	39	<1.0	<1.0	5.3
	10/19/2005	410	490	<0.50	<0.50	<0.50	<1.0	160	<60	<1.0	<1.0	4.4
	1/18/2006	280	390	<0.50	<0.50	<0.50	<1.0	150	<40	<1.0	<1.0	3.9
MW-6	9/27/2002	78	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0
	1/22/2003	280	170	<0.50	<0.50	<0.50	<0.50	250	55	<1.0	<1.0	5.5
	4/23/2003	320	250	<0.50	<0.50	<0.50	<0.50	290	45	<1.0	<1.0	7.9
	7/23/2003	<50	510	<0.50	<0.50	<0.50	0.55	190	38	<1.0	<1.0	7.7
	10/22/2003	290	340	0.83	<0.50	<0.50	<0.50	290	36	<1.0	<1.0	7
	1/21/2004	290	310	<0.50	<0.50	<0.50	<0.50	270	<120	<1.0	<1.0	7.6
	4/21/2004	<50	290	0.67	<0.50	<0.50	<0.50	260	43	<1.0	<1.0	7.7
	7/21/2004	1,000	470	<0.50	<0.50	<0.50	<0.50	350	39	<1.0	<1.0	7.0
	10/7/2004	110	260	<0.50	<0.50	<0.50	<1.0	210	<80	<1.0	<1.0	5.7
	1/19/2005	81	170	<0.50	<0.50	<0.50	<1.0	130	46	<1.0	<1.0	4.1
	4/20/2005	440	500	<0.50	<0.50	<0.50	<1.0	180	<50	<1.0	<1.0	5.5
	7/20/2005	410	210	<0.50	<0.50	<0.50	<1.0	180	<60	<1.0	<1.0	5.6
	10/19/2005	420	150	<0.50	<0.50	<0.50	<1.0	89	<40	<1.0	<1.0	3.4
	1/18/2006	140	130	<0.50	<0.50	<0.50	<1.0	100	<30	<1.0	<1.0	2.8

1. ug/L: micrograms per Liter
2. TPHD: Total Petroleum Hydrocarbons as Diesel, analyzed in general accordance with EPA Method 3510/GCFID.
3. TPHG: Total Petroleum Hydrocarbons as Gasoline, Benzene (B), Toluene (T), Ethylbenzene (E), and total Xylenes (X), Methyl Tertiary-ButylEther (MTBE), Tertiary-Butyl Alcohol (TBA), Diisopropyl Ether (DIPE), Ethyl Tertiary-Butyl Ether (ETBE), Tertiary-Amyl Butyl Ether (TAME), analyzed in general accordance with EPA Method 8260B.
4. <: Denotes a laboratory values less than the method detection limit.

Table B-3
Summary of Stockpile/Biopile Petroleum Hydrocarbons Concentrations
City of Arcata Corporation Yard
(in ug/g)[1]

Sample Location	Date	TPHG[2]	TPHD[3]	TPHMO[3]	Benzene[4]	Toluene[4]	Ethyl-benzene[4]	Total Xylenes[4]	MTBE[4]
Stockpile Samples									
SP1A	9/5/2002	**2.9**	**95**	**160**	**0.019**	**0.013**	**0.015**	**0.048**	<0.050[5]
SP1B	9/5/2002	**2.5**	**22**	**60**	**0.017**	**0.0096**	**0.0095**	**0.0286**	<0.050
SP2A	9/5/2002	**7.9**	**120**	**110**	**0.0054**	<0.040	**0.011**	**0.032**	<0.050
SP2B	9/5/2002	**190**	**740**	**260**	<0.0050	<0.015	<0.040	<0.10	**0.11**
SP3A	9/5/2002	**4.7**	**73**	**85**	**0.19**	**0.017**	**0.0099**	**0.052**	<0.050
SP3B	9/5/2002	**29**	**150**	**130**	**0.028**	<0.050	**0.039**	**0.12**	<0.050
SP4A	9/5/2002	**2.0**	**1.2**	**10**	<0.0050	<0.020	**0.0057**	**0.039**	<0.050
SP4B	9/5/2002	**2.0**	**21**	**63**	<0.0050	<0.030	<0.0050	**0.034**	<0.050
Biopile Samples									
SP-1A,B,C,D	9/12/2003	**3.1**	**53**	**85**	<0.005	<0.005	<0.005	**0.019**	<0.05
SP-1E,F,G,H	9/12/2003	**3.3**	**70**	**73**	<0.005	<0.005	<0.005	**0.008**	<0.05
SP-1A,B,C,D	3/5/2004	**1.6**	**87**	**120**	<0.005	<0.005	<0.005	**0.0085**	<0.05
SP-1E,F,G,H	3/5/2004	**1.5**	**73**	**160**	<0.005	<0.005	<0.005	**0.0144**	<0.05
SP-1A,B,C,D	9/21/2004	**2.2**	**34**	**74**	<0.0058	<0.012	<0.0058	**0.011**	<0.058
SP-1E,F,G,H	9/21/2004	**2.1**	**58**	**86**	<0.0056	<0.011	<0.0056	**0.021**	<0.056
SP-1A,B,C,D	3/10/2005	<1.1[6]	**36**	**120**	<0.0057	<0.0057	<0.0057	<0.0057	<0.057
SP-1E,F,G,H	3/10/2005	**6.3**	**66**	**140**	<0.0058	<0.0058	<0.0058	<0.0058	<0.058
BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' COMP	4/4&5/06	<1.0	**30**	**110**	<0.0050	<0.0050	<0.0050	**0.0143**	<0.050
BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' COMP	4/4&5/06	<1.0	**30**	**120**	<0.0050	<0.0050	<0.0050	**0.0069**	<0.050
BP-9@3'/BP-10@4'/BP-11@4'/BP-12@6' COMP	4/4&5/06	<1.0	**55**	**150**	<0.0050	<0.0050	<0.0050	**0.0072**	<0.050
BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' COMP	4/4&5/06	<1.0	**37**	<100	<0.0050	<0.0050	<0.0050	**0.0068**	<0.050
BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' COMP	4/4&5/06	<1.0	**46**	<100	<0.0050	<0.0050	<0.0050	**0.0068**	<0.050
BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' COMP	4/4&5/06	<1.0	**62**	**110**	<0.0050	<0.0050	<0.0050	**0.0072**	<0.050
BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' COMP	4/4&5/06	<1.0	**20**	**120**	<0.0050	**0.0067**	<0.0050	**0.0080**	<0.050
BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2' COMP	4/4&5/06	<1.0	**26**	<100	<0.0050	<0.0050	<0.0050	<0.010	<0.050
BP-33@2'/BP-34@4'/BP-35@5'/BP-36@6' COMP	4/4&5/06	<1.0	**23**	<100	<0.0050	<0.0050	<0.0050	<0.010	<0.050
BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' COMP	4/4&5/06	<1.0	**28**	<100	<0.0050	<0.0050	<0.0050	**0.0083**	<0.050

1. ug/g: micrograms per gram.
2. TPHG: Total Petroleum Hydrocarbons as Gasoline, analyzed in general accordance with EPA Method 5035/GCFID(LUFT)/EPA8015B.
3. Total Petroleum Hydrocarbons as Diesel (TPHD) and as Motor Oil (TPHMO) analyzed in general accordance with EPA Method No.
4. Benzene (B), Toluene (T), Ethylbenzene (E), and total Xylenes (X), and Methyl Tertiary-Butyl Ether (MTBE) analyzed using EPA Method No.
5. <: denotes a laboratory value that is "less than" the method detection limit.

Appendix C

Laboratory Analytical Reports

NORTH COAST LABORATORIES LTD.

REC'D FEB - 2 2006

January 31, 2006

City of Arcata
Dept. of Public Works
736 F Street
Arcata, CA 95521
Attn: Kim Watson

Order No.: 0601307
Invoice No.: 55946
PO No.:
ELAP No. 1247-Expires July 2006

RE: 000108100, Arcata Corp Yard

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-1
01D	MW-1
02A	MW-2
02D	MW-2
03A	MW-4
03D	MW-4
04A	MW-6
04D	MW-6
05A	MW-3
05D	MW-3
06A	MW-5
06D	MW-5

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Printed on Recycled Paper

North Coast Laboratories, Ltd. **Date:** *01-Feb-06*

CLIENT: City of Arcata
Project: 000108100, Arcata Corp Yard
Lab Order: 0601307

CASE NARRATIVE

All samples submitted for a silica gel cleanup were initially analyzed for diesel. The samples showing no detectable levels of the analyte were not subjected to the cleanup procedure.

TPH as Diesel with Silica Gel Cleanup:
Sample MW-6 contains material similar to degraded or weathered diesel oil.

Sample MW-5 contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.

The surrogate recovery for sample MW-4 was outside of the acceptance limits. The surrogate recoveries for the quality control samples were within the acceptance limits. This indicates that the low surrogate recovery may be due to matrix effects from the sample.

Gasoline Components/Additives:
The gasoline value for sample MW-5 includes the reported gasoline additives in addition to other peaks in the gasoline range.

The gasoline values for samples MW-2, MW-4, MW-6 and MW-3 are primarily from the reported gasoline additives.

Some reporting limits were raised for samples MW-6, MW-3 and MW-5 due to matrix interference.

TPH as Diesel:
The laboratory control sample duplicate (LCSD) recovery was above the upper acceptance limit for diesel. This recovery indicates that the sample results may be erroneously high. There were no detectable levels of the analyte in the samples; therefore, the data were accepted.

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-1 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-01A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	6.3	1.0	µg/L	1.0		1/25/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		1/25/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/25/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/25/06
Benzene	ND	0.50	µg/L	1.0		1/25/06
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		1/25/06
Toluene	ND	0.50	µg/L	1.0		1/25/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/25/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/25/06
o-Xylene	ND	0.50	µg/L	1.0		1/25/06
Surrogate: 1,4-Dichlorobenzene-d4	109	80.8-139	% Rec	1.0		1/25/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		1/25/06

Client Sample ID: MW-1 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-01D

Test Name: TPH as Diesel **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	1/20/06	1/21/06
Surrogate: N-Tricosane	74.8	70-130	% Rec	1.0	1/20/06	1/21/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-2 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-02A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	28	1.0	µg/L	1.0		1/25/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		1/25/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/25/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/25/06
Benzene	ND	0.50	µg/L	1.0		1/25/06
Tert-amyl methyl ether (TAME)	1.6	1.0	µg/L	1.0		1/25/06
Toluene	ND	0.50	µg/L	1.0		1/25/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/25/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/25/06
o-Xylene	ND	0.50	µg/L	1.0		1/25/06
Surrogate: 1,4-Dichlorobenzene-d4	109	80.8-139	% Rec	1.0		1/25/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	50	50	µg/L	1.0		1/25/06

Client Sample ID: MW-2 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-02D

Test Name: TPH as Diesel **Reference:** EPA 3510/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	1/20/06	1/21/06
Surrogate: N-Tricosane	81.5	70-130	% Rec	1.0	1/20/06	1/21/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-4 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-03A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	270	50	µg/L	50		1/26/06
Tert-butyl alcohol (TBA)	56	10	µg/L	1.0		1/26/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/26/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/26/06
Benzene	ND	0.50	µg/L	1.0		1/26/06
Tert-amyl methyl ether (TAME)	7.6	1.0	µg/L	1.0		1/26/06
Toluene	ND	0.50	µg/L	1.0		1/26/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/26/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/26/06
o-Xylene	ND	0.50	µg/L	1.0		1/26/06
Surrogate: 1,4-Dichlorobenzene-d4	109	80.8-139	% Rec	1.0		1/26/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	300	50	µg/L	1.0		1/26/06

Client Sample ID: MW-4 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-03D

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	1/26/06	1/31/06
Surrogate: N-Tricosane	37.2	38-129	% Rec	1.0	1/26/06	1/31/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-6 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-04A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	100	50	µg/L	50		1/26/06
Tert-butyl alcohol (TBA)	ND	30	µg/L	1.0		1/26/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/26/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/26/06
Benzene	ND	0.50	µg/L	1.0		1/26/06
Tert-amyl methyl ether (TAME)	2.8	1.0	µg/L	1.0		1/26/06
Toluene	ND	0.50	µg/L	1.0		1/26/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/26/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/26/06
o-Xylene	ND	0.50	µg/L	1.0		1/26/06
Surrogate: 1,4-Dichlorobenzene-d4	110	80.8-139	% Rec	1.0		1/26/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	130	50	µg/L	1.0		1/26/06

Client Sample ID: MW-6 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-04D

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	140	50	µg/L	1.0	1/26/06	1/31/06
Surrogate: N-Tricosane	48.6	38-129	% Rec	1.0	1/26/06	1/31/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-3 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-05A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	100	50	µg/L	50		1/26/06
Tert-butyl alcohol (TBA)	ND	30	µg/L	1.0		1/26/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/26/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/26/06
Benzene	ND	0.50	µg/L	1.0		1/26/06
Tert-amyl methyl ether (TAME)	3.3	1.0	µg/L	1.0		1/26/06
Toluene	ND	0.50	µg/L	1.0		1/26/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/26/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/26/06
o-Xylene	ND	0.50	µg/L	1.0		1/26/06
Surrogate: 1,4-Dichlorobenzene-d4	111	80.8-139	% Rec	1.0		1/26/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	140	50	µg/L	1.0		1/26/06

Client Sample ID: MW-3 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-05D

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	ND	50	µg/L	1.0	1/26/06	1/31/06
Surrogate: N-Tricosane	43.0	38-129	% Rec	1.0	1/26/06	1/31/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

Date: 31-Jan-06
WorkOrder: 0601307

ANALYTICAL REPORT

Client Sample ID: MW-5 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-06A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	150	50	µg/L	50		1/26/06
Tert-butyl alcohol (TBA)	ND	40	µg/L	1.0		1/26/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		1/26/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		1/26/06
Benzene	ND	0.50	µg/L	1.0		1/26/06
Tert-amyl methyl ether (TAME)	3.9	1.0	µg/L	1.0		1/26/06
Toluene	ND	0.50	µg/L	1.0		1/26/06
Ethylbenzene	ND	0.50	µg/L	1.0		1/26/06
m,p-Xylene	ND	0.50	µg/L	1.0		1/26/06
o-Xylene	ND	0.50	µg/L	1.0		1/26/06
Surrogate: 1,4-Dichlorobenzene-d4	113	80.8-139	% Rec	1.0		1/26/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	390	50	µg/L	1.0		1/26/06

Client Sample ID: MW-5 **Received:** 1/18/06 **Collected:** 1/18/06 0:00
Lab ID: 0601307-06D

Test Name: TPH as Diesel with Silica Gel Cleanup **Reference:** EPA 3510/3630/GCFID(LUFT)/8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	280	50	µg/L	1.0	1/26/06	1/31/06
Surrogate: N-Tricosane	42.9	38-129	% Rec	1.0	1/26/06	1/31/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831
Printed on Recycled Paper

North Coast Laboratories, Ltd.

Date: 31-Jan-06

CLIENT: City of Arcata
Work Order: 0601307
Project: 000108100, Arcata Corp Yard

QC SUMMARY REPORT

Method Blank

Sample ID: **MB 012506** Batch ID: **R39433** Test Code: **8260OXYW** Units: **µg/L** Analysis Date: **1/25/06 7:12:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125B** SeqNo: **566375**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
Benzene	ND	0.50									
Tert-amyl methyl ether (TAME)	ND	1.0									
Toluene	0.1603	0.50									J
Ethylbenzene	0.1303	0.50									J
m,p-Xylene	0.3134	0.50									J
o-Xylene	0.1675	0.50									J
1,4-Dichlorobenzene-d4	1.10	0.10	1.00	0	110%	81	139	0			

Sample ID: **MB 012506** Batch ID: **R39429** Test Code: **GASW-MS** Units: **µg/L** Analysis Date: **1/25/06 7:12:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125A** SeqNo: **566341**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	27.18	50									J

Sample ID: **MB-15063** Batch ID: **15063** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date: **1/31/06 1:49:09 AM** Prep Date: **1/26/06**
Client ID: Run ID: **ORGC5_060130A** SeqNo: **567077**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	38.93	50									J
N-Tricosane	34.6	0.10	50.0	0	69.1%	38	129	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0601307
Project: 000108100, Arcata Corp Yard

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-15027** Batch ID: **15027** Test Code: **TPHDIW** Units: **µg/L** Analysis Date: **1/21/06 3:43:58 PM** Prep Date: **1/20/06**

Client ID: Run ID: **ORGC7_060121A** SeqNo: **565116**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	ND	50									
N-Tricosane	44.9	0.10	50.0	0	89.9%	70	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 31-Jan-06

CLIENT: City of Arcata
Work Order: 0601307
Project: 000108100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-06053** Batch ID: **R39433** Test Code: **8260OXYW** Units: **µg/L** Analysis Date: **1/25/06 4:39:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125B** SeqNo: **566373**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	20.06	1.0	20.0	0	100%	80	120	0			
Tert-butyl alcohol (TBA)	425.4	10	400	0	106%	25	162	0			
Di-isopropyl ether (DIPE)	20.72	1.0	20.0	0	104%	80	120	0			
Ethyl tert-butyl ether (ETBE)	20.60	1.0	20.0	0	103%	77	120	0			
Benzene	21.00	0.50	20.0	0	105%	78	117	0			
Tert-amyl methyl ether (TAME)	19.46	1.0	20.0	0	97.3%	64	136	0			
Toluene	20.94	0.50	20.0	0	105%	80	120	0			
Ethylbenzene	19.75	0.50	20.0	0	98.7%	80	120	0			
m,p-Xylene	40.54	0.50	40.0	0	101%	80	120	0			
o-Xylene	19.22	0.50	20.0	0	96.1%	80	120	0			
1,4-Dichlorobenzene-d4	1.09	0.10	1.00	0	109%	81	139	0			

Sample ID: **LCSD-06053** Batch ID: **R39433** Test Code: **8260OXYW** Units: **µg/L** Analysis Date: **1/26/06 12:17:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125B** SeqNo: **566387**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18.97	1.0	20.0	0	94.8%	80	120	20.1	5.58%	20	
Tert-butyl alcohol (TBA)	426.2	10	400	0	107%	25	162	425	0.185%	20	
Di-isopropyl ether (DIPE)	19.31	1.0	20.0	0	96.6%	80	120	20.7	7.03%	20	
Ethyl tert-butyl ether (ETBE)	18.47	1.0	20.0	0	92.3%	77	120	20.6	10.9%	20	
Benzene	21.08	0.50	20.0	0	105%	78	117	21.0	0.406%	20	
Tert-amyl methyl ether (TAME)	17.71	1.0	20.0	0	88.6%	64	136	19.5	9.41%	20	
Toluene	20.87	0.50	20.0	0	104%	80	120	20.9	0.339%	20	
Ethylbenzene	19.33	0.50	20.0	0	96.7%	80	120	19.8	2.14%	20	
m,p-Xylene	40.03	0.50	40.0	0	100%	80	120	40.5	1.25%	20	
o-Xylene	17.87	0.50	20.0	0	89.4%	80	120	19.2	7.27%	20	
1,4-Dichlorobenzene-d4	1.14	0.10	1.00	0	115%	81	139	1.09	5.09%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0601307
Project: 000108100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-06054** Batch ID: **R39429** Test Code: **GASW-MS** Units: **µg/L** Analysis Date: **1/25/06 5:55:00 AM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125A** SeqNo: **566339**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	978.3	50	1,000	0	97.8%	80	120	0			

Sample ID: **LCSD-06054** Batch ID: **R39429** Test Code: **GASW-MS** Units: **µg/L** Analysis Date: **1/26/06 12:42:00 PM** Prep Date:
Client ID: Run ID: **ORGCMS3_060125A** SeqNo: **566353**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	966.0	50	1,000	0	96.6%	80	120	978	1.27%	20	

Sample ID: **LCS-15063** Batch ID: **15063** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date: **1/30/06 11:53:46 PM** Prep Date: **1/26/06**
Client ID: Run ID: **ORGC5_060130A** SeqNo: **567075**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	348.6	50	500	0	69.7%	41	96	0			
N-Tricosane	32.1	0.10	50.0	0	64.2%	38	129	0			

Sample ID: **LCSD-15063** Batch ID: **15063** Test Code: **SGTPHDW** Units: **µg/L** Analysis Date: **1/31/06 12:17:04 AM** Prep Date: **1/26/06**
Client ID: Run ID: **ORGC5_060130A** SeqNo: **567076**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	384.7	50	500	0	76.9%	41	96	349	9.86%	15	
N-Tricosane	34.9	0.10	50.0	0	69.8%	38	129	32.1	8.43%	15	

Sample ID: **LCS-15027** Batch ID: **15027** Test Code: **TPHDIW** Units: **µg/L** Analysis Date: **1/21/06 1:42:29 PM** Prep Date: **1/20/06**
Client ID: Run ID: **ORGC7_060121A** SeqNo: **565113**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	576.2	50	500	0	115%	67	120	0			
N-Tricosane	53.1	0.10	50.0	0	106%	70	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0601307
Project: 000108100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID: **LCSD-15027** Batch ID: **15027** Test Code: **TPHDIW** Units: **µg/L** Analysis Date: **1/21/06 2:02:17 PM** Prep Date: **1/20/06**

Client ID: Run ID: **ORGC7_060121A** SeqNo: **565114**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	615.6	50	500	0	123%	67	120	576	6.62%	15	S
N-Tricosane	51.4	0.10	50.0	0	103%	70	130	53.1	3.22%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: 060 | 307

Attention: Kim WATSON
Results & Invoice to: City of ARCATA
Address: 736 F. Street
ARCATA CA. 95521
Phone: 825-2180
Copies of Report to: SHN- mike Fugert
812 W WABASH AVE EUREKA CA
Sampler (Sign & Print): Tom Wilkinson

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 000108100
Project Name: ARCATA GOLF YARD
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD w/SG	ANALYSIS: 8260 LIST 1
	MW-1	01/18/00		G.W.			X	X
	MW-2	↓		↓			X	X
	MW-4						X	X
	MW-6						X	X
	MW-3						X	X
	MW-5						X	X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

ON ICE

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature]	1/18/00 1520	[signature]	1/18/00 1520

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.

May 02, 2006

City of Arcata
Dept. of Public Works
736 F Street
Arcata, CA 95521
Attn: Kim Watson

Order No.: 0604132
Invoice No.: 57870
PO No.:
ELAP No. 1247-Expires July 2006

RE: 000108.100, Arcata Corp Yard

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' COMP
02A	BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' COMP
03A	BP-9@3'/BP-10@4'/BP-11@5'/BP-12@6' CO
04A	BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' C
05A	BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' C
06A	BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' C
07A	BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' C
08A	BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2'
09A	BP-33@3'/BP-34@4'/BP-35@5'/BP-36@6' C
10A	BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' C
11A	BP-1,5,9,13,17,21,25,29,33,37 COMP
12A	BP-2,6,10,14,18,22,26,30,34,38 COMP
13A	BP-3,7,11,15,19,23,27,31,35,39 COMP
14A	B-4,8,12,16,20,24,28,32,36,40 COMP

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

North Coast Laboratories, Ltd. **Date:** *02-May-06*

CLIENT: City of Arcata
Project: 000108.100, Arcata Corp Yard
Lab Order: 0604132

CASE NARRATIVE

TPH as Diesel/Motor Oil:
Samples BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' COMP, BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' COMP, BP-9@3'/BP-10@4'/BP-11@5'/BP-12@6' COMP, BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' COMP, BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' COMP, BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' COMP, BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' COMP, BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2', BP-33@3'/BP-34@4'/BP-35@5'/BP-36@6' COMP and BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' COMP contain material similar to degraded or weathered diesel oil.

Samples BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' COMP, BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' COMP, BP-9@3'/BP-10@4'/BP-11@4'/BP-12@6' COMP, BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' COMP and BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' COMP do not have the typical pattern of fresh motor oil. However, the results reported represent the amount of material in the motor oil range.

Motor oil is being reported as not detected (ND) for samples BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' COMP, BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' COMP, BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2', BP-33@2'/BP-34@4'/BP-35@5'/BP-36@6' COMP and BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' COMP with a dilution due to matrix interference.

Nitrate/Nitrite:
The extract for this test was prepared from 2.0 grams sample and 20.0 mLs deionized water.

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 01-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-1@1'/BP-2@2'/BP-3@3'/BP-4@4' CO **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-01A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0090	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	0.0053	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	30	10	µg/g	10	4/11/06	4/11/06
TPHC Motor Oil	110	100	µg/g	10	4/11/06	4/11/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

Client Sample ID: BP-5@5'/BP-6@6'/BP-7@1'/BP-8@2' CO **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-02A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0069	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	103	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	30	10	µg/g	10	4/11/06	4/11/06
TPHC Motor Oil	120	100	µg/g	10	4/11/06	4/11/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 02-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-9@3'/BP-10@4'/BP-11@5'/BP-12@6' **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-03A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0072	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	103	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	55	10	µg/g	10	4/11/06	4/11/06
TPHC Motor Oil	150	100	µg/g	10	4/11/06	4/11/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

Client Sample ID: BP-13@1'/BP-14@2'/BP-15@3'/BP-16@4' **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-04A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0068	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	37	10	µg/g	10	4/11/06	4/11/06
TPHC Motor Oil	ND	100	µg/g	10	4/11/06	4/11/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 01-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-17@5'/BP-18@6'/BP-19@1'/BP-20@2' **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-05A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0068	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	103	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	46	10	µg/g	10	4/11/06	4/11/06
TPHC Motor Oil	ND	100	µg/g	10	4/11/06	4/11/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

Client Sample ID: BP-21@3'/BP-22@4'/BP-23@5'/BP-24@6' **Received:** 4/7/06 **Collected:** 4/4/06 0:00
Lab ID: 0604132-06A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0072	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	62	10	µg/g	10	4/11/06	4/12/06
TPHC Motor Oil	110	100	µg/g	10	4/11/06	4/12/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 01-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-25@1'/BP-26@2'/BP-27@3'/BP-28@4' **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-07A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	0.0067	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0080	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	20	10	µg/g	10	4/11/06	4/17/06
TPHC Motor Oil	120	100	µg/g	10	4/11/06	4/17/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

Client Sample ID: BP-29@5'/BP-30@6'/BP-31@1'/BP-32@2' **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-08A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	101	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	26	10	µg/g	10	4/11/06	4/17/06
TPHC Motor Oil	ND	100	µg/g	10	4/11/06	4/17/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

NORTH COAST LABORATORIES
5680 West End Road · Arcata, California 95521-9202 · 707-822-4649 · FAX 707-822-6831

Date: 02-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-33@3'/BP-34@4'/BP-35@5'/BP-36@6' **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-09A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	101	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	23	10	µg/g	10	4/11/06	4/17/06
TPHC Motor Oil	ND	100	µg/g	10	4/11/06	4/17/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

Client Sample ID: BP-37@1'/BP-38@2'/BP-39@3'/BP-40@4' **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-10A

Test Name: BTEX **Reference:** EPA 5035/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	0.050	µg/g	1.0	4/18/06	4/18/06
Benzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Toluene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Ethylbenzene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
m,p-Xylene	0.0083	0.0050	µg/g	1.0	4/18/06	4/18/06
o-Xylene	ND	0.0050	µg/g	1.0	4/18/06	4/18/06
Surrogate: Cis-1,2-Dichloroethylene	104	71.8-135	% Rec	1.0	4/18/06	4/18/06

Test Name: TPH as Diesel/Motor Oil **Reference:** EPA 3550/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Diesel (C12-C22)	28	10	µg/g	10	4/11/06	4/17/06
TPHC Motor Oil	ND	100	µg/g	10	4/11/06	4/17/06

Test Name: TPH as Gasoline **Reference:** EPA 5035/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	1.0	µg/g	1.0	4/18/06	4/18/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 02-May-06
WorkOrder: 0604132

ANALYTICAL REPORT

Client Sample ID: BP-1,5,9,13,17,21,25,29,33,37 COMP **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-11A

Test Name: F, SO4, Cl, NO3, NO2 **Reference:** EPA 300.0 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	38	1.0	µg/g	1.0		4/12/06
Nitrite (as Nitrogen)	ND	1.0	µg/g	1.0		4/12/06

Test Name: Percent Moisture **Reference:** Std. Meth. 19th Ed. 2540G Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Percent Moisture	10	0.10	%	1.0		4/11/06

Test Name: Total Kjeldahl Nitrogen **Reference:** EPA 351.4 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Kjeldahl Nitrogen	650	150	µg/g	1.0		4/11/06

Test Name: Total Nitrogen **Reference:** Std. Meth. 19th Ed. 4500-N

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Nitrogen	690	150	µg/g	1.0		4/26/06

Test Name: Total Phosphate Phosphorus **Reference:** EPA 365.2 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Phosphate Phosphorus	15	2.0	µg/g	1.0	4/18/06	4/20/06

Client Sample ID: BP-2,6,10,14,18,22,26,30,34,38 COMP **Received:** 4/7/06 **Collected:** 4/5/06 0:00
Lab ID: 0604132-12A

Test Name: F, SO4, Cl, NO3, NO2 **Reference:** EPA 300.0 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	43	1.0	µg/g	1.0		4/12/06
Nitrite (as Nitrogen)	ND	1.0	µg/g	1.0		4/12/06

Test Name: Percent Moisture **Reference:** Std. Meth. 19th Ed. 2540G Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Percent Moisture	12	0.10	%	1.0		4/11/06

Test Name: Total Kjeldahl Nitrogen **Reference:** EPA 351.4 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Kjeldahl Nitrogen	610	150	µg/g	1.0		4/11/06

Test Name: Total Nitrogen **Reference:** Std. Meth. 19th Ed. 4500-N

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Nitrogen	650	150	µg/g	1.0		4/26/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 01-May-06

WorkOrder: 0604132

ANALYTICAL REPORT

Test Name: Total Phosphate Phosphorus **Reference:** EPA 365.2 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Phosphate Phosphorus	11	2.0	µg/g	1.0	4/18/06	4/20/06

Client Sample ID: BP-3,7,11,15,19,23,27,31,35,39 COMP **Received:** 4/7/06 **Collected:** 4/5/06 0:00

Lab ID: 0604132-13A

Test Name: F, SO4, Cl, NO3, NO2 **Reference:** EPA 300.0 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	25	1.0	µg/g	1.0		4/12/06
Nitrite (as Nitrogen)	ND	1.0	µg/g	1.0		4/12/06

Test Name: Percent Moisture **Reference:** Std. Meth. 19th Ed. 2540G Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Percent Moisture	12	0.10	%	1.0		4/11/06

Test Name: Total Kjeldahl Nitrogen **Reference:** EPA 351.4 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Kjeldahl Nitrogen	640	150	µg/g	1.0		4/11/06

Test Name: Total Nitrogen **Reference:** Std. Meth. 19th Ed. 4500-N

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Nitrogen	660	150	µg/g	1.0		4/26/06

Test Name: Total Phosphate Phosphorus **Reference:** EPA 365.2 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Phosphate Phosphorus	13	2.0	µg/g	1.0	4/18/06	4/20/06

Client Sample ID: B-4,8,12,16,20,24,28,32,36,40 COMP **Received:** 4/7/06 **Collected:** 4/5/06 0:00

Lab ID: 0604132-14A

Test Name: F, SO4, Cl, NO3, NO2 **Reference:** EPA 300.0 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Nitrate (as Nitrogen)	30	1.0	µg/g	1.0		4/12/06
Nitrite (as Nitrogen)	ND	1.0	µg/g	1.0		4/12/06

Test Name: Percent Moisture **Reference:** Std. Meth. 19th Ed. 2540G Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Percent Moisture	13	0.10	%	1.0		4/11/06

Test Name: Total Kjeldahl Nitrogen **Reference:** EPA 351.4 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Kjeldahl Nitrogen	670	150	µg/g	1.0		4/11/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Date: 01-May-06

WorkOrder: 0604132

ANALYTICAL REPORT

Test Name: Total Nitrogen **Reference:** Std. Meth. 19th Ed. 4500-N

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Nitrogen	700	150	µg/g	1.0		4/26/06

Test Name: Total Phosphate Phosphorus **Reference:** EPA 365.2 Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Total Phosphate Phosphorus	14	2.0	µg/g	1.0	4/18/06	4/20/06

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521-9202 • 707-822-4649 • FAX 707-822-6831

North Coast Laboratories, Ltd.

Date: 01-May-06

CLIENT: City of Arcata
Work Order: 0604132
Project: 000108.100, Arcata Corp Yard

QC SUMMARY REPORT

Method Blank

Sample ID **MB-15553** Batch ID: **15553** Test Code: **BTXES** Units: **µg/g** Analysis Date **4/18/06 5:45:13 PM** Prep Date **4/18/06**
Client ID: Run ID: **ORGC8_060418B** SeqNo: **587310**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	0.050									
Benzene	ND	0.0050									
Toluene	ND	0.0050									
Ethylbenzene	ND	0.0050									
m,p-Xylene	ND	0.0050									
o-Xylene	ND	0.0050									
Cis-1,2-Dichloroethylene	1.04	0.10	1.00	0	104%	72	135	0			

Sample ID **MBLK 041206** Batch ID: **R40768** Test Code: **IONICS** Units: **µg/g** Analysis Date **4/12/06 10:18:15 AM** Prep Date
Client ID: Run ID: **INIC2_060412B** SeqNo: **585532**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as Nitrogen)	ND	1.0									J
Nitrite (as Nitrogen)	ND	1.0									J

Sample ID **MBLK** Batch ID: **R40809** Test Code: **NKJES** Units: **µg/g** Analysis Date **4/11/06** Prep Date
Client ID: Run ID: **WC_060411K** SeqNo: **586193**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Kjeldahl Nitrogen	77.40	150									J

Sample ID **MBLK** Batch ID: **R40886** Test Code: **PO4TOS** Units: **µg/g** Analysis Date **4/20/06** Prep Date **4/18/06**
Client ID: Run ID: **WC_060418D** SeqNo: **587404**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Phosphate Phosphorus	ND	2.0									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0604132
Project: 000108.100, Arcata Corp Yard

QC SUMMARY REPORT

Method Blank

Sample ID **MB-15553** Batch ID: **15553** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **4/18/06 5:45:13 PM** Prep Date **4/18/06**
Client ID: Run ID: **ORGC8_060418A** SeqNo: **587295**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	0.8604	1.0									J

Sample ID **MB-15493** Batch ID: **15493** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/11/06 6:14:10 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060412A** SeqNo: **585603**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	0.5013	1.0									J
TPHC Motor Oil	ND	10									

Sample ID **MB-15498** Batch ID: **15498** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/17/06 7:25:22 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060417A** SeqNo: **586902**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	0.6845	1.0									J
TPHC Motor Oil	8.455	10									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 01-May-06

CLIENT: City of Arcata
Work Order: 0604132
Project: 000108.100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-15553** Batch ID: **15553** Test Code: **BTXES** Units: **µg/g** Analysis Date **4/19/06 12:42:26 AM** Prep Date **4/18/06**
Client ID: Run ID: **ORGC8_060418B** SeqNo: **587322**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.3810	0.050	0.400	0	95.3%	75	124	0			
Benzene	0.05106	0.0050	0.0500	0	102%	80	128	0			
Toluene	0.05212	0.0050	0.0500	0	104%	85	126	0			
Ethylbenzene	0.05271	0.0050	0.0500	0	105%	80	126	0			
m,p-Xylene	0.09966	0.0050	0.100	0	99.7%	84	130	0			
o-Xylene	0.05063	0.0050	0.0500	0	101%	84	125	0			
Cis-1,2-Dichloroethylene	1.18	0.10	1.00	0	118%	72	135	0			

Sample ID **LCSD-15553** Batch ID: **15553** Test Code: **BTXES** Units: **µg/g** Analysis Date **4/19/06 1:16:43 AM** Prep Date **4/18/06**
Client ID: Run ID: **ORGC8_060418B** SeqNo: **587323**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	0.3674	0.050	0.400	0	91.8%	75	124	0.381	3.65%	15	
Benzene	0.04944	0.0050	0.0500	0	98.9%	80	128	0.0511	3.24%	15	
Toluene	0.05071	0.0050	0.0500	0	101%	85	126	0.0521	2.74%	15	
Ethylbenzene	0.05156	0.0050	0.0500	0	103%	80	126	0.0527	2.19%	15	
m,p-Xylene	0.09730	0.0050	0.100	0	97.3%	84	130	0.0997	2.40%	15	
o-Xylene	0.04888	0.0050	0.0500	0	97.8%	84	125	0.0506	3.51%	15	
Cis-1,2-Dichloroethylene	1.15	0.10	1.00	0	115%	72	135	1.18	2.05%	15	

Sample ID **LCS 04120601** Batch ID: **R40768** Test Code: **IONICS** Units: **µg/g** Analysis Date **4/12/06 10:33:52 AM** Prep Date
Client ID: Run ID: **INIC2_060412B** SeqNo: **585533**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as Nitrogen)	10.09	1.0	10.0	0	101%	90	110	0			
Nitrite (as Nitrogen)	9.957	1.0	10.0	0	99.6%	90	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0604132
Project: 000108.100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS** | Batch ID: **R40809** | Test Code: **NKJES** | Units: **µg/g** | Analysis Date **4/11/06** | Prep Date
Client ID: | Run ID: **WC_060411K** | SeqNo: **586194**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Kjeldahl Nitrogen	1,575	150	1,500	0	105%	70	113	0			

Sample ID **LCSD** | Batch ID: **R40809** | Test Code: **NKJES** | Units: **µg/g** | Analysis Date **4/11/06** | Prep Date
Client ID: | Run ID: **WC_060411K** | SeqNo: **586195**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Kjeldahl Nitrogen	1,605	150	1,500	0	107%	70	113	0			

Sample ID **LCS** | Batch ID: **R40886** | Test Code: **PO4TOS** | Units: **µg/g** | Analysis Date **4/20/06** | Prep Date **4/18/06**
Client ID: | Run ID: **WC_060418D** | SeqNo: **587405**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Phosphate Phosphorus	23.81	2.0	25.0	0	95.2%	70	120	0			

Sample ID **LCSD** | Batch ID: **R40886** | Test Code: **PO4TOS** | Units: **µg/g** | Analysis Date **4/20/06** | Prep Date **4/18/06**
Client ID: | Run ID: **WC_060418D** | SeqNo: **587406**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Phosphate Phosphorus	25.76	2.0	25.0	0	103%	70	120	23.8	7.89%	20	

Sample ID **LCS-15553-G** | Batch ID: **15553** | Test Code: **TPHCGS** | Units: **µg/g** | Analysis Date **4/19/06 1:50:58 AM** | Prep Date **4/18/06**
Client ID: | Run ID: **ORGC8_060418A** | SeqNo: **587306**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	11.04	1.0	10.0	0	110%	102	128	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: City of Arcata
Work Order: 0604132
Project: 000108.100, Arcata Corp Yard

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID **LCSD-15553-G** Batch ID: **15553** Test Code: **TPHCGS** Units: **µg/g** Analysis Date **4/19/06 2:25:10 AM** Prep Date **4/18/06**
Client ID: Run ID: **ORGC8_060418A** SeqNo: **587307**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	11.02	1.0	10.0	0	110%	102	128	11.0	0.204%	15	

Sample ID **LCS-15493** Batch ID: **15493** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/11/06 4:11:55 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060412A** SeqNo: **585600**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.66	1.0	10.0	0	107%	70	130	0			
TPHC Motor Oil	22.20	10	20.0	0	111%	70	130	0			

Sample ID **LCSD-15493** Batch ID: **15493** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/11/06 4:32:14 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060412A** SeqNo: **585601**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.94	1.0	10.0	0	109%	70	130	10.7	2.58%	15	
TPHC Motor Oil	22.44	10	20.0	0	112%	70	130	22.2	1.05%	15	

Sample ID **LCS-15498** Batch ID: **15498** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/17/06 5:23:38 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060417A** SeqNo: **586900**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	11.25	1.0	10.0	0	112%	70	130	0			
TPHC Motor Oil	21.51	10	20.0	0	108%	70	130	0			

Sample ID **LCSD-15498** Batch ID: **15498** Test Code: **TPHDMS** Units: **µg/g** Analysis Date **4/17/06 5:44:07 PM** Prep Date **4/11/06**
Client ID: Run ID: **ORGC7_060417A** SeqNo: **586901**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Diesel (C12-C22)	10.99	1.0	10.0	0	110%	70	130	11.2	2.30%	15	
TPHC Motor Oil	21.32	10	20.0	0	107%	70	130	21.5	0.870%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

25 April 2006

North Coast Labs, Inc.
Attn: Trudie Haughy
5680 West End Road
Arcata, CA 95521
RE: 0604132
Work Order: A604275

Enclosed are the results of analyses for samples received by the laboratory on 04/11/06 10:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kelley M Thompson

Kelley M. Thompson For Sheri L. Speaks
Project Manager

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

North Coast Labs, Inc.
5680 West End Road
Arcata, CA 95521
Attn: Trudie Haughy

Report Date: 04/25/06 14:46
Project No: 0604132
Project ID: 0604132

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A604275	04/11/2006 10:50	NCL	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BP-1,5,9,13,17,21,25,29,33,37 Comp	A604275-01	Soil	04/05/06 00:00	04/11/06 10:50
BP- 2,6,10,14,18,22,26,30,34,38 Comp	A604275-02	Soil	04/05/06 00:00	04/11/06 10:50
BP- 3,7,11,15,19,23,27,31,35,39 Comp	A604275-03	Soil	04/05/06 00:00	04/11/06 10:50
BP- 4,8,12,16,20,24,28,32,36,40 Comp	A604275-04	Soil	04/05/06 00:00	04/11/06 10:50

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove

Bruce Gove
Laboratory Director

4/25/2006

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

North Coast Labs, Inc.
5680 West End Road
Arcata, CA 95521
Attn: Trudie Haughy

Report Date: 04/25/06 14:46
Project No: 0604132
Project ID: 0604132

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A604275	04/11/2006 10:50	NCL	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
BP-1,5,9,13,17,21,25,29,33,37 Comp (A604275-01)			**Sample Type: Soil**			**Sampled: 04/05/06 00:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Organic Carbon	EPA 9060	AD61804	04/18/06	04/24/06	1	**18300 mg/kg**	**1.00**	
BP- 2,6,10,14,18,22,26,30,34,38 Comp (A604275-02)			**Sample Type: Soil**			**Sampled: 04/05/06 00:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Organic Carbon	EPA 9060	AD61804	04/18/06	04/24/06	1	**16100 mg/kg**	**1.00**	
BP- 3,7,11,15,19,23,27,31,35,39 Comp (A604275-03)			**Sample Type: Soil**			**Sampled: 04/05/06 00:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Organic Carbon	EPA 9060	AD61804	04/18/06	04/24/06	1	**13800 mg/kg**	**1.00**	
BP- 4,8,12,16,20,24,28,32,36,40 Comp (A604275-04)			**Sample Type: Soil**			**Sampled: 04/05/06 00:00**		
Conventional Chemistry Parameters by APHA/EPA Methods								
Total Organic Carbon	EPA 9060	AD61804	04/18/06	04/24/06	1	**15600 mg/kg**	**1.00**	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove

Bruce Gove
Laboratory Director

4/25/2006

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

North Coast Labs, Inc.
5680 West End Road
Arcata, CA 95521
Attn: Trudie Haughy

Report Date: 04/25/06 14:46
Project No: 0604132
Project ID: 0604132

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A604275	04/11/2006 10:50	NCL	

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD61804 - General Prep										
Blank (AD61804-BLK1)				Prepared: 04/18/06		Analyzed: 04/24/06				
Total Organic Carbon	ND	1.00	mg/kg							
LCS (AD61804-BS1)				Prepared: 04/18/06		Analyzed: 04/24/06				
Total Organic Carbon	5840	1.00	mg/kg	5370		109	60-140			
LCS Dup (AD61804-BSD1)				Prepared: 04/18/06		Analyzed: 04/24/06				
Total Organic Carbon	6990	1.00	mg/kg	5370		130	60-140	17.9	20	
Duplicate (AD61804-DUP1)		**Source: A604435-01**		Prepared: 04/18/06		Analyzed: 04/24/06				
Total Organic Carbon	1300	1.00	mg/kg		1340			3.03	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce Gove
Laboratory Director

4/25/2006

Alpha Analytical Laboratories Inc.
208 Mason St. Ukiah, California 95482
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

North Coast Labs, Inc.
5680 West End Road
Arcata, CA 95521
Attn: Trudie Haughy

Report Date: 04/25/06 14:46
Project No: 0604132
Project ID: 0604132

Order Number	Receipt Date/Time	Client Code	Client PO/Reference
A604275	04/11/2006 10:50	NCL	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
PQL	Practical Quantitation Limit

North Coast Laboratories, Ltd.
5680 West End Road

Arcata, CA 95521-9202
(707) 822-4649

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

Subcontractor:

Alpha Analytical
208 Mason St.

Ukiah, CA 95482

TEL: 707-468-0401
FAX:

Acct #:

14-Apr-06

				Requested Tests						
Sample ID	**Matrix**	**Collection Date**	**Bottle Type**	**TOC**						
0604132-11A	Soil	4/5/06	4OZGU	1						
0604132-12A	Soil	4/5/06	4OZGU	1						
0604132-13A	Soil	4/5/06	4OZGU	1						
0604132-14A	Soil	4/5/06	4OZGU	1						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention:
Results & Invoice to: SHN
Address: 812 West Wabash Avenue
Eureka, CA 95501
Phone: 441-8855
Copies of Report to:

Sampler (Sign & Print):

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number:
Project Name:
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS	SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: _____
Results & Invoice to: SHN
Address: 812 West Wabash Avenue
Eureka, CA 95501
Phone: 441-8855
Copies of Report to: _____
Sampler (Sign & Print): _____

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION
Project Number: _____
Project Name: _____
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*

ANALYSIS	CONTAINER	PRESERVATIVE

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: _____

Attention: _____
Results & Invoice to: SHN
Address: 812 West Wabash Avenue
Eureka, CA 95501
Phone: 441-8855
Copies of Report to: _____
Sampler (Sign & Print): _____

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION
Project Number: _____
Project Name: _____
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*

ANALYSIS	CONTAINER	PRESERVATIVE

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA _____
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention:
Results & Invoice to: SHN
Address: 812 West Wabash Avenue
Eureka, CA 95501
Phone: 441-8855
Copies of Report to:

Sampler (Sign & Print):

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number:
Project Name:
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER: _____

Attention: _____
Results & Invoice to: _____
Address: _____
_____
Phone: _____
Copies of Report to: _____
_____
Sampler (Sign & Print): _____

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:___/___/___
Final Report: FAX ☐ Verbal ☐ By:___/___/___

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: _____
Project Name: _____
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*
11				
12				
13				
14				

PRESERVATIVE														
CONTAINER														
ANALYSIS														

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA _____
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT