

GW - 32

REPORTS

YEAR(S):

1991-EPA RCRA PHASE I

FINAL BOOK 5

RCRA FACILITY INVESTIGATION
PHASE I - FINAL REPORT
GIANT REFINING COMPANY
GALLUP, NEW MEXICO
APRIL 8, 1991
BOOK 5

This Booklet Includes
Section 9.0
9.3.2
9.4.1
9.4.2
and
Section 10.0

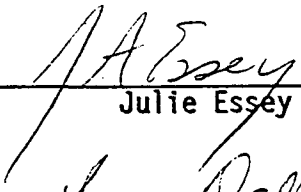
Section 9.0
RMAL No. 010259

ANALYTICAL RESULTS
FOR
GIANT REFINING
ENSECO-RMAL NO. 010259



AUGUST 2, 1990

Reviewed by:


Julie Essey


Sue Dalla

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171



August 2, 1990

Mr. Claud Rosendale
Giant Refining
17 Miles East of Gallup
I-40, Exit 39
Gallup, NM 87301

Dear Mr. Rosendale:

Enclosed is the report for 13 samples we received at Enseco-Rocky Mountain Analytical Laboratory on July 5, 1990.

Included with the report is a quality control summary.

Please call if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Julie Essey'.

Julie Essey
Program Administrator

Reviewed by:

A handwritten signature in cursive script, appearing to read 'Sue Dalla'.

Sue Dalla
Manager
Program Administration

JE/SD/lw
Enclosures

RMAL #010259

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- o Sample Description Information
- o Analytical Test Requests
- o Analytical Results
- o Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Due to interferences originating from non-target and/or target compounds, dilutions were performed for sample 010259-0005 by Method 8270. The reporting limits were raised accordingly.

All 8270 samples were prepped according to SW-846 using 2.0 grams of sample followed by a 50% partition then concentration to 1.0 mL for analysis. With this prep method nominal reporting limits are generally 10,000 ug/kg. After careful review of all chromatograms it has been determined that we can lower the nominal reporting limit to 5,000 ug/kg for this project.

Prep blank contamination from chromium by Method 6010, made it necessary to raise the reporting limits for the corresponding samples prepared with that method blank. For this project the reporting limits by Method 6010 were raised for 010259-0001 through 0013 due to prep blank contamination. It should be noted that Enseco no longer blank corrects sample data.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
Giant Refining

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	
010259-0001-SA	RFI 0903V0.0	SOIL	02 JUL 90	10:29	05 JUL 90
010259-0002-SA	RFI 0903V3.0	SOIL	02 JUL 90	10:38	05 JUL 90
010259-0003-SA	RFI 0903V5.0	SOIL	02 JUL 90	10:50	05 JUL 90
010259-0004-SA	RFI 0903V7.0	SOIL	02 JUL 90	11:01	05 JUL 90
010259-0005-SA	RFI 0906V0.0	SOIL	02 JUL 90	12:01	05 JUL 90
010259-0006-SA	RFI 0906V3.0	SOIL	02 JUL 90	12:06	05 JUL 90
010259-0007-SA	RFI 0906V5.0	SOIL	02 JUL 90	12:13	05 JUL 90
010259-0008-SA	RFI 0906V7.0	SOIL	02 JUL 90	12:19	05 JUL 90
010259-0009-SA	RFI 0906D3.0	SOIL	02 JUL 90	12:06	05 JUL 90
010259-0010-SA	RFI 0907V0.0	SOIL	02 JUL 90	12:22	05 JUL 90
010259-0011-SA	RFI 0907V3.0	SOIL	02 JUL 90	12:42	05 JUL 90
010259-0012-SA	RFI 0907V5.0	SOIL	02 JUL 90	12:46	05 JUL 90
010259-0013-SA	RFI 0907V7.0	SOIL	02 JUL 90	12:58	05 JUL 90

ANALYTICAL TEST REQUESTS
for
Giant Refining

Lab ID:	Group	Analysis Description	Custom
010259	Code		Test?
0001 - 0013	A	ICP Suite (Standard List)	Y
		Prep - Total Metals, ICP	N
		Arsenic by Graphite Furnace AA	N
		Prep - Total Metals, Furnace AA	N
		Selenium by Graphite Furnace AA	N
		Mercury by Cold Vapor AA	N
		Prep - Mercury, Cold Vapor AA	N
		Appendix IX Semivolatile Organics	Y
		Prep - Semivolatile Organics by GC/MS	N
		Priority Pollutant Volatile Organics	Y
		GC Screen For Medium Level Soils	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V0.0
Lab ID: 010259-0001-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082049
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V0.0
Lab ID: 010259-0001-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082049
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
 Toluene-d8	 99	 %	 --
4-Bromofluorobenzene	98	%	--
1,2-Dichloroethane-d4	94	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V3.0
Lab ID: 010259-0002-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082079
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 03 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V3.0
Lab ID: 010259-0002-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082079
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 03 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	97	%	--
4-Bromofluorobenzene	103	%	--
1,2-Dichloroethane-d4	102	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	97	%	--
4-Bromofluorobenzene	104	%	--
1,2-Dichloroethane-d4	100	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V7.0
Lab ID: 010259-0004-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082081
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0903V7.0
Lab ID: 010259-0004-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082081
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	101	%	--
4-Bromofluorobenzene	104	%	--
1,2-Dichloroethane-d4	105	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0906V0.0
Lab ID: 010259-0005-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082082
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)**Method 8240**

Client Name: Giant Refining
Client ID: RFI 0906V0.0
Lab ID: 010259-0005-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082082
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	102	%	--
4-Bromofluorobenzene	99	%	--
1,2-Dichloroethane-d4	99	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0906V3.0
 Lab ID: 010259-0006-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082083
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0906V3.0
Lab ID: 010259-0006-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082083
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	93	%	--
4-Bromofluorobenzene	97	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0906V5.0
 Lab ID: 010259-0007-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082084
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0906V5.0
Lab ID: 010259-0007-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082084
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	102	%	--
4-Bromofluorobenzene	103	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0906V7.0
 Lab ID: 010259-0008-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082085
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0906V7.0
Lab ID: 010259-0008-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082085
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	100	%	--
4-Bromofluorobenzene	99	%	--
1,2-Dichloroethane-d4	111	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0906D3.0
 Lab ID: 010259-0009-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082086
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0906D3.0
Lab ID: 010259-0009-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082086
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	96	%	--
4-Bromofluorobenzene	98	%	--
1,2-Dichloroethane-d4	104	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI 0907V0.0
Lab ID: 010259-0010-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082087
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0907V0.0
Lab ID: 010259-0010-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082087
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	101	%	--
4-Bromofluorobenzene	102	%	--
1,2-Dichloroethane-d4	109	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0907V3.0
 Lab ID: 010259-0011-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082088
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0907V3.0
Lab ID: 010259-0011-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082088
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	104	%	--
4-Bromofluorobenzene	101	%	--
1,2-Dichloroethane-d4	90	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0907V5.0
 Lab ID: 010259-0012-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082089
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

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ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0907V5.0
Lab ID: 010259-0012-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082089
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Toluene-d8	100	%	--
4-Bromofluorobenzene	98	%	--
1,2-Dichloroethane-d4	90	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI 0907V7.0
 Lab ID: 010259-0013-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082090
 Sampled: 02 JUL 90
 Prepared: 11 JUL 90

Received: 05 JUL 90
 Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI 0907V7.0
Lab ID: 010259-0013-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082090
Sampled: 02 JUL 90
Prepared: 11 JUL 90

Received: 05 JUL 90
Analyzed: 13 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
 Toluene-d8	 103	 %	 --
4-Bromofluorobenzene	101	%	--
1,2-Dichloroethane-d4	92	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V0.0
Lab ID: 010259-0001-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082049
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0903V0.0
 Lab ID: 010259-0001-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082049
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0903V0.0
 Lab ID: 010259-0001-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082049
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	84	%	--
2-Fluorobiphenyl	94	%	--
Terphenyl-d14	100	%	--
Phenol-d5	102	%	--
2-Fluorophenol	90	%	--
2,4,6-Tribromophenol	72	%	--

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0903V3.0
 Lab ID: 010259-0002-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082079
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 03 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V3.0
Lab ID: 010259-0002-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082079
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 03 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	92	%	--
2-Fluorobiphenyl	99	%	--
Terphenyl-d14	107	%	--
Phenol-d5	100	%	--
2-Fluorophenol	99	%	--
2,4,6-Tribromophenol	78	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	87	%	--
2-Fluorobiphenyl	89	%	--
Terphenyl-d14	96	%	--
Phenol-d5	90	%	--
2-Fluorophenol	89	%	--
2,4,6-Tribromophenol	70	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V7.0
Lab ID: 010259-0004-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082081
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0903V7.0
 Lab ID: 010259-0004-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082081
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0903V7.0
Lab ID: 010259-0004-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082081
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	90	%	--
2-Fluorobiphenyl	89	%	--
Terphenyl-d14	94	%	--
Phenol-d5	89	%	--
2-Fluorophenol	89	%	--
2,4,6-Tribromophenol	65	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V0.0
Lab ID: 010259-0005-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082082
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	10000
Acenaphthylene	ND	ug/kg	10000
Acetophenone	ND	ug/kg	10000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	10000
Anthracene	ND	ug/kg	10000
Benzo(a)anthracene	ND	ug/kg	10000
Benzo(b)fluoranthene	ND	ug/kg	10000
Benzo(k)fluoranthene	ND	ug/kg	10000
Benzo(g,h,i)perylene	ND	ug/kg	10000
Benzo(a)pyrene	ND	ug/kg	10000
Benzyl alcohol	ND	ug/kg	10000
bis(2-Chloroethoxy)-methane	ND	ug/kg	10000
bis(2-Chloroethyl) ether	ND	ug/kg	10000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	10000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	10000
4-Bromophenyl phenyl ether	ND	ug/kg	10000
Butyl benzyl phthalate	ND	ug/kg	10000
4-Chloroaniline	ND	ug/kg	10000
4-Chloro-3-methylphenol	ND	ug/kg	10000
2-Chloronaphthalene	ND	ug/kg	10000
2-Chlorophenol	ND	ug/kg	10000
4-Chlorophenyl phenyl ether	ND	ug/kg	10000
o-Cresol	ND	ug/kg	10000
m & p-Cresol(s)	ND	ug/kg	10000
Chrysene	26000	ug/kg	10000
Dibenz(a,h)anthracene	ND	ug/kg	10000
Di-n-butyl phthalate	ND	ug/kg	10000
1,2-Dichlorobenzene	ND	ug/kg	10000
1,3-Dichlorobenzene	ND	ug/kg	10000
1,4-Dichlorobenzene	ND	ug/kg	10000
3,3'-Dichlorobenzidine	ND	ug/kg	20000
2,4-Dichlorophenol	ND	ug/kg	10000
2,6-Dichlorophenol	ND	ug/kg	10000
Diethyl phthalate	ND	ug/kg	10000
p-Dimethylaminoazobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V0.0
Lab ID: 010259-0005-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082082
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	10000
a,a-Dimethylphenethylamine	ND	ug/kg	10000
2,4-Dimethylphenol	ND	ug/kg	10000
Dimethyl phthalate	ND	ug/kg	10000
1,3-Dinitrobenzene	ND	ug/kg	10000
4,6-Dinitro-o-cresol	ND	ug/kg	50000
2,4-Dinitrophenol	ND	ug/kg	50000
2,4-Dinitrotoluene	ND	ug/kg	10000
2,6-Dinitrotoluene	ND	ug/kg	10000
Di-n-octyl phthalate	ND	ug/kg	10000
Diphenylamine	ND	ug/kg	10000
Ethyl methanesulfonate	ND	ug/kg	10000
Fluoranthene	ND	ug/kg	10000
Fluorene	ND	ug/kg	10000
Hexachlorobenzene	ND	ug/kg	10000
Hexachlorobutadiene	ND	ug/kg	10000
Hexachlorocyclopentadiene	ND	ug/kg	10000
Hexachloroethane	ND	ug/kg	10000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10000
Isophorone	ND	ug/kg	10000
3-Methylcholanthrene	ND	ug/kg	10000
Methyl methanesulfonate	ND	ug/kg	10000
2-Methylnaphthalene	ND	ug/kg	10000
Naphthalene	ND	ug/kg	10000
1-Naphthylamine	ND	ug/kg	10000
2-Naphthylamine	ND	ug/kg	10000
2-Nitroaniline	ND	ug/kg	50000
3-Nitroaniline	ND	ug/kg	50000
4-Nitroaniline	ND	ug/kg	50000
Nitrobenzene	ND	ug/kg	10000
2-Nitrophenol	ND	ug/kg	10000
4-Nitrophenol	ND	ug/kg	50000
N-Nitroso-di-n-butylamine	ND	ug/kg	10000
N-Nitrosodimethylamine	ND	ug/kg	10000
N-Nitrosodiphenylamine	ND	ug/kg	10000
N-Nitroso-di-n-propylamine	ND	ug/kg	10000
N-Nitrosopiperidine	ND	ug/kg	10000
Pentachlorobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0906V0.0
 Lab ID: 010259-0005-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082082
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	50000
Pentachlorophenol	ND	ug/kg	50000
Phenacetin	ND	ug/kg	10000
Phenanthrene	ND	ug/kg	10000
Phenol	ND	ug/kg	10000
2-Picoline	ND	ug/kg	10000
Pronamide	ND	ug/kg	10000
Pyrene	20000	ug/kg	10000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	10000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	50000
1,2,4-Trichlorobenzene	ND	ug/kg	10000
2,4,5-Trichlorophenol	ND	ug/kg	50000
2,4,6-Trichlorophenol	ND	ug/kg	10000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	10000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	10000
Nitrobenzene-d5	94	%	--
2-Fluorobiphenyl	96	%	--
Terphenyl-d14	95	%	--
Phenol-d5	95	%	--
2-Fluorophenol	97	%	--
2,4,6-Tribromophenol	86	%	--

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0906V3.0
 Lab ID: 010259-0006-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082083
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0906V3.0
 Lab ID: 010259-0006-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082083
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0906V3.0
 Lab ID: 010259-0006-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082083
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	86	%	--
2-Fluorobiphenyl	91	%	--
Terphenyl-d14	88	%	--
Phenol-d5	88	%	--
2-Fluorophenol	87	%	--
2,4,6-Tribromophenol	83	%	--

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining

Client ID: RFI 0906V5.0

Lab ID: 010259-0007-SA

Matrix: SOIL

Authorized: 05 JUL 90

Enseco ID: 1082084

Sampled: 02 JUL 90

Prepared: 08 JUL 90

Received: 05 JUL 90

Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V5.0
Lab ID: 010259-0007-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082084
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0906V5.0
 Lab ID: 010259-0007-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082084
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	87	%	--
2-Fluorobiphenyl	91	%	--
Terphenyl-d14	89	%	--
Phenol-d5	88	%	--
2-Fluorophenol	87	%	--
2,4,6-Tribromophenol	80	%	--

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V7.0
Lab ID: 010259-0008-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082085
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V7.0
Lab ID: 010259-0008-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082085
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906V7.0
Lab ID: 010259-0008-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082085
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	87	%	--
2-Fluorobiphenyl	92	%	--
Terphenyl-d14	85	%	--
Phenol-d5	88	%	--
2-Fluorophenol	85	%	--
2,4,6-Tribromophenol	79	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906D3.0
Lab ID: 010259-0009-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082086
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906D3.0
Lab ID: 010259-0009-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082086
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0906D3.0
Lab ID: 010259-0009-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082086
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	92	%	--
2-Fluorobiphenyl	95	%	--
Terphenyl-d14	89	%	--
Phenol-d5	92	%	--
2-Fluorophenol	90	%	--
2,4,6-Tribromophenol	78	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0907V0.0
 Lab ID: 010259-0010-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082087
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl)phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V0.0
Lab ID: 010259-0010-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082087
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0907V0.0
 Lab ID: 010259-0010-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082087
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	85	%	--
2-Fluorobiphenyl	87	%	--
Terphenyl-d14	78	%	--
Phenol-d5	86	%	--
2-Fluorophenol	86	%	--
2,4,6-Tribromophenol	88	%	--

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining.
 Client ID: RFI 0907V3.0
 Lab ID: 010259-0011-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082088
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V3.0
Lab ID: 010259-0011-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082088
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V3.0
Lab ID: 010259-0011-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082088
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	91	%	--
2-Fluorobiphenyl	97	%	--
Terphenyl-d14	83	%	--
Phenol-d5	93	%	--
2-Fluorophenol	91	%	--
2,4,6-Tribromophenol	97	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V5.0
Lab ID: 010259-0012-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082089
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V5.0
Lab ID: 010259-0012-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082089
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V5.0
Lab ID: 010259-0012-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082089
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	87	%	--
2-Fluorobiphenyl	90	%	--
Terphenyl-d14	79	%	--
Phenol-d5	87	%	--
2-Fluorophenol	85	%	--
2,4,6-Tribromophenol	88	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining

Client ID: RFI 0907V7.0

Lab ID: 010259-0013-SA

Matrix: SOIL

Authorized: 05 JUL 90

Enseco ID: 1082090

Sampled: 02 JUL 90

Prepared: 08 JUL 90

Received: 05 JUL 90

Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI 0907V7.0
 Lab ID: 010259-0013-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082090
 Sampled: 02 JUL 90
 Prepared: 08 JUL 90

Received: 05 JUL 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI 0907V7.0
Lab ID: 010259-0013-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082090
Sampled: 02 JUL 90
Prepared: 08 JUL 90

Received: 05 JUL 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	86	%	--
2-Fluorobiphenyl	89	%	--
Terphenyl-d14	75	%	--
Phenol-d5	86	%	--
2-Fluorophenol	85	%	--
2,4,6-Tribromophenol	87	%	--

ND = Not detected
NA = Not applicable

Reported By: Cheryl Jones

Approved By: Jeff Lowry

Total Metals

Client Name: Giant Refining
Client ID: RFI 0903V0.0
Lab ID: 010259-0001-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082049

Sampled: 02 JUL 90

Prepared: See Below

Received: 05 JUL 90

Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	ND	mg/kg	0.50	7060	26 JUL 90	27 JUL 90
Barium	214	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.73	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	4.9	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	1.6	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	4.5	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	6.0	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	5.1	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	991	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	10.1	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	8.7	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
 Client ID: RFI 0903V3.0
 Lab ID: 010259-0002-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082079
 Sampled: 02 JUL 90
 Prepared: See Below

Received: 05 JUL 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	ND	mg/kg	0.50	7060	26 JUL 90	27 JUL 90
Barium	307	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	6.1	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.1	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	4.8	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	8.0	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	6.7	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	955	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	13.1	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	9.6	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0903V5.0
Lab ID: 010259-0003-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082080
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	ND	mg/kg	1.0	7060	26 JUL 90	27 JUL 90
Barium	334	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.2	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	7.6	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	3.4	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	8.6	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	9.9	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	9.1	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1300	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	16.1	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	13.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0903V7.0
Lab ID: 010259-0004-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082081
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	0.58	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	224	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	7.6	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	3.2	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	5.8	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	7.3	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	8.2	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1860	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	1.0	7740	26 JUL 90	27 JUL 90
Vanadium	14.9	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	13.3	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0906V0.0
Lab ID: 010259-0005-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082082
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	1.7	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	289	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.79	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	7.8	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.3	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	14.3	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	28.1	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	11.4	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	989	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	1.0	7740	26 JUL 90	27 JUL 90
Vanadium	14.5	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	22.8	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0906V3.0
Lab ID: 010259-0006-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082083
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	1.2	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	243	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	6.3	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.6	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	5.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	9.2	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	7.0	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1110	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	1.0	7740	26 JUL 90	27 JUL 90
Vanadium	14.5	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	10.6	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
 Client ID: RFI 0906V5.0
 Lab ID: 010259-0007-SA
 Matrix: SOIL
 Authorized: 05 JUL 90

Enseco ID: 1082084
 Sampled: 02 JUL 90
 Prepared: See Below

Received: 05 JUL 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	ND	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	241	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.97	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	5.1	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	1.9	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	4.5	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	7.5	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	5.3	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	897	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	12.6	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	8.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0906D3.0
Lab ID: 010259-0009-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082086
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	ND	mg/kg	1.0	7060	26 JUL 90	29 JUL 90
Barium	226	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	6.3	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.6	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	5.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	8.1	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	7.2	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1120	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	14.2	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	10.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0907V0.0
Lab ID: 010259-0010-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082087
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	1.4	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	447	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.59	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	102	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	1.2	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	10.5	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	14.0	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	6.0	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	853	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	1.0	7740	26 JUL 90	27 JUL 90
Vanadium	14.6	mg/kg	1.0	5010	26 JUL 90	27 JUL 90
Zinc	157	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0907V3.0
Lab ID: 010259-0011-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082088
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	0.66	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	234	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.97	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	8.6	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.9	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	5.5	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	9.1	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	7.7	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1030	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	1.0	7740	26 JUL 90	27 JUL 90
Vanadium	13.1	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	14.3	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0907V5.0
Lab ID: 010259-0012-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082089
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	0.61	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	208	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	0.66	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	16.2	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	1.5	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	4.1	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	7.2	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	4.7	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	776	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	10.3	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	23.8	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Total Metals

Client Name: Giant Refining
Client ID: RFI 0907V7.0
Lab ID: 010259-0013-SA
Matrix: SOIL
Authorized: 05 JUL 90

Enseco ID: 1082090
Sampled: 02 JUL 90
Prepared: See Below

Received: 05 JUL 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	26 JUL 90	27 JUL 90
Arsenic	0.58	mg/kg	0.50	7060	26 JUL 90	29 JUL 90
Barium	240	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	26 JUL 90	27 JUL 90
Cadmium	ND	mg/kg	0.50	6010	26 JUL 90	27 JUL 90
Chromium	7.6	mg/kg	1.1	6010	26 JUL 90	27 JUL 90
Cobalt	2.5	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Copper	5.1	mg/kg	2.0	6010	26 JUL 90	27 JUL 90
Lead	7.5	mg/kg	5.0	6010	26 JUL 90	27 JUL 90
Mercury	ND	mg/kg	0.10	7471	19 JUL 90	20 JUL 90
Nickel	6.8	mg/kg	4.0	6010	26 JUL 90	27 JUL 90
Potassium	1390	mg/kg	500	6010	26 JUL 90	27 JUL 90
Selenium	ND	mg/kg	0.50	7740	26 JUL 90	27 JUL 90
Vanadium	12.7	mg/kg	1.0	6010	26 JUL 90	27 JUL 90
Zinc	13.4	mg/kg	2.0	6010	26 JUL 90	27 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

- 1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix
- 3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and
- 4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery ± 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference $+ 3$ standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010259-0001-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0002-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0003-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0004-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0005-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0006-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0007-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0008-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0009-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0010-SA	SOIL	8240-S	10 JUL 90-L	13 JUL 90-L
010259-0011-SA	SOIL	8240-S	13 JUL 90-H	13 JUL 90-H
010259-0012-SA	SOIL	8240-S	13 JUL 90-H	13 JUL 90-H
010259-0013-SA	SOIL	8240-S	13 JUL 90-H	13 JUL 90-H

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Spiked	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1				DCS	Limits	DCS	Limit
Category: 8240-S									
Matrix: SOIL									
QC Lot: 10 JUL 90-L									
Concentration Units: ug/kg									
1,1-Dichloroethene	5000	4400		4300	4350	87	59-172	2.3	22
Trichloroethene	5000	4960		5060	5010	100	62-137	2.0	24
Benzene	5000	4710		4870	4790	96	66-142	3.3	21
Toluene	5000	4820		4870	4840	97	59-139	1.0	21
Chlorobenzene	5000	5000		5070	5040	101	60-133	1.4	21

Category: 8240-S
Matrix: SOIL
QC Lot: 13 JUL 90-H
Concentration Units: ug/kg

1,1-Dichloroethene	5000	5330		5360	5340	107	59-172	0.6	22
Trichloroethene	5000	4880		5060	4970	99	62-137	3.6	24
Benzene	5000	5050		5170	5110	102	66-142	2.3	21
Toluene	5000	5560		5760	5660	113	59-139	3.5	21
Chlorobenzene	5000	5130		5330	5230	105	60-133	3.8	21

Calculations are performed before rounding to avoid round-off errors in calculated results.

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8240-S
Matrix: SOIL
QC Lot: 10 JUL 90-L QC Run: 13 JUL 90-L
Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	5410	108	70-121
4-Bromofluorobenzene	5000	4900	98	74-121
Toluene-d8	5000	4990	100	81-117

Category: 8240-S
Matrix: SOIL
QC Lot: 13 JUL 90-H QC Run: 13 JUL 90-H
Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	4820	96	70-121
4-Bromofluorobenzene	5000	5010	100	74-121
Toluene-d8	5000	5100	102	81-117

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Volatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 10 JUL 90-L QC Run: 13 JUL 90-L			
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone	ND	ug/kg	1000

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 10 JUL 90-L QC Run: 13 JUL 90-L			
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
Ethyl methacrylate	ND	ug/kg	1000
2-Hexanone	ND	ug/kg	1000
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 13 JUL 90-H QC Run: 13 JUL 90-H			
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)			
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010259-0001-SA	SOIL	8270-S	08 JUL 90-A	08 JUL 90-A
010259-0002-SA	SOIL	8270-S	08 JUL 90-A	08 JUL 90-A
010259-0003-SA	SOIL	8270-S	08 JUL 90-A	08 JUL 90-A
010259-0004-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0005-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0006-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0007-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0008-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0009-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0010-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0011-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0012-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010259-0013-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8270-S

Matrix: SOIL

QC Lot: 08 JUL 90-A QC Run: 08 JUL 90-A

Concentration Units: ug/kg

Nitrobenzene-d5	1670	1240	74	23-120
2-Fluorobiphenyl	1670	1400	84	30-115
Terphenyl-d14	1670	1550	93	18-137
2-Fluorophenol	3330	2650	80	25-121
Phenol-d5	3330	2460	74	24-113
2,4,6-Tribromophenol	3330	2800	84	19-122

Category: 8270-S

Matrix: SOIL

QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B

Concentration Units: ug/kg

Nitrobenzene-d5	1670	1320	79	23-120
2-Fluorobiphenyl	1670	1330	80	30-115
Terphenyl-d14	1670	1490	89	18-137
2-Fluorophenol	3330	2540	76	25-121
Phenol-d5	3330	2530	76	24-113
2,4,6-Tribromophenol	3330	2940	88	19-122

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
 Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
bis(2-Ethylhexyl)			
phthalate	ND	ug/kg	5000
4-Bromophenyl			
phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl			
phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000
7,12-Dimethylbenz(a)-			
anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-			
amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro-benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
1,2-Diphenylhydrazine	ND	ug/kg	5000

QC LOT ASSIGNMENT REPORT

Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010259-0001-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0001-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0001-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0001-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0002-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0002-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0002-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0002-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0003-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0003-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0003-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0003-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0004-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0004-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0004-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0004-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0005-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0005-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0005-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0005-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0006-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0006-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0006-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0006-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0007-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0007-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0007-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0007-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0008-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0008-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0008-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0008-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0009-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0009-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0009-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0009-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0010-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0010-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0010-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0010-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0011-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0011-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0011-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0011-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0012-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0012-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0012-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation (cont.)

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010259-0012-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C
010259-0013-SA	SOIL	ICP-S	26 JUL 90-B	26 JUL 90-B
010259-0013-SA	SOIL	AS-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0013-SA	SOIL	SE-FAA-S	26 JUL 90-C	26 JUL 90-C
010259-0013-SA	SOIL	HG-CVAA-S	19 JUL 90-C	19 JUL 90-C

DUPLICATE CONTROL SAMPLE REPORT Metals Analysis and Preparation

Analyte	Spiked	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1				DCS	Limits	DCS	Limit
Category: ICP-S									
Matrix: SOIL									
QC Lot: 26 JUL 90-B									
Concentration Units: mg/kg									
Aluminum	200	180		189	184	92	75-125	4.9	20
Antimony	50	41.8		44.0	42.9	86	75-125	5.1	20
Arsenic	50	42.4		41.6	42.0	84	75-125	1.8	20
Barium	200	161		169	165	82	75-125	4.5	20
Beryllium	5.0	4.39		4.56	4.48	90	75-125	3.7	20
Cadmium	5.0	3.75		4.12	3.93	79	75-125	9.4	20
Calcium	10000	8970		9340	9160	92	75-125	4.0	20
Chromium	20	18.2		19.4	18.8	94	75-125	6.4	20
Cobalt	50	40.1		41.7	40.9	82	75-125	3.9	20
Copper	25	21.9		22.4	22.2	89	75-125	2.1	20
Iron	100	86.2		92.9	89.5	90	75-125	7.5	20
Lead	50	39.2		42.4	40.8	82	75-125	7.9	20
Magnesium	5000	4600		4790	4690	94	75-125	3.9	20
Manganese	50	40.9		42.5	41.7	83	75-125	3.7	20
Nickel	50	40.9		42.5	41.7	83	75-125	3.7	20
Potassium	5000	4450		4630	4540	91	75-125	4.0	20
Silver	5.0	4.64		4.79	4.71	94	75-125	3.3	20
Sodium	10000	8840		9120	8980	90	75-125	3.2	20
Vanadium	50	44.5		46.4	45.5	91	75-125	4.2	20
Zinc	50	39.7		42.6	41.2	82	75-125	7.0	20

Category: AS-FAA-S
 Matrix: SOIL
 QC Lot: 26 JUL 90-C
 Concentration Units: mg/kg

Arsenic	4	3.27	3.38	3.32	83	75-125	3.3	20
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Category: SE-FAA-S
 Matrix: SOIL
 QC Lot: 26 JUL 90-C
 Concentration Units: mg/kg

Selenium	1	0.840	0.860	0.850	85	75-125	2.4	20
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Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT Metals Analysis and Preparation (cont.)

Analyte	Concentration			Accuracy		Precision	
	Spiked	DCS1	Measured DCS2	AVG	Average(%) DCS Limits	(RPD) DCS Limit	
Category: HG-CVAA-S Matrix: SOIL QC Lot: 19 JUL 90-C Concentration Units: mg/kg							
Mercury	0.50	0.589	0.578	0.584	117 75-125	1.9	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICPOCP-ICPS-S			
Matrix: SOIL			
QC Lot: 26 JUL 90-B QC Run: 26 JUL 90-B			
Antimony	ND	mg/kg	6.0
Barium	ND	mg/kg	1.0
Beryllium	ND	mg/kg	0.20
Cadmium	ND	mg/kg	0.50
Chromium	1.1	mg/kg	1.0
Cobalt	ND	mg/kg	1.0
Copper	ND	mg/kg	2.0
Lead	ND	mg/kg	5.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Vanadium	ND	mg/kg	1.0
Zinc	ND	mg/kg	2.0

Test: GF-ASCP-TAL-S
 Matrix: SOIL
 QC Lot: 26 JUL 90-C QC Run: 26 JUL 90-C

Arsenic	ND	mg/kg	0.50
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Test: GF-SECP-TAL-S
 Matrix: SOIL
 QC Lot: 26 JUL 90-C QC Run: 26 JUL 90-C

Selenium	ND	mg/kg	0.50
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Test: CV-HGCP-TAL-S
 Matrix: SOIL
 QC Lot: 19 JUL 90-C QC Run: 19 JUL 90-C

Mercury	ND	mg/kg	0.10
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Appendix

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essex

CHAIN OF CUSTODY

No.

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes ☒ No ☐
3. Condition of Contents: Good
4. Sealed for Shipping by: Chasenda
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No ☐
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Enseco Client Giant
Project RFI
Sampling Co. Giant
Sampling Site Cin129
Team Leader M. McGahey

2MA# 10259

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7-2-90	9:20	RFID902V30	Soil	2	Metals, 8240, 8270	
7-2-90	9:28	RFID902V5.0	Soil	2	Metals, 8240, 8270	
7-2-90	9:45	RFID902V7.0	Soil	2	Metals, 8240, 8270	
7-2-90	9:50	RFID905V0.0	Soil	2	Metals, 8240, 8270	
7-2-90	9:58	RFID905V3.0	Soil	2	Metals, 8240, 8270	
7-2-90	10:06	RFID905V5.0	Soil	2	Metals, 8240, 8270	
7-2-90	10:14	RFID905V7.0	Soil	2	Metals, 8240, 8270	
7-2-90	10:06	RFID905V5.0	Soil	2	Metals, 8240, 8270	
7-2-90	10:24	RFID903V0.0	Soil	2	Metals, 8240, 8270	
7-2-90	10:38	RFID903V3.0	Soil	2	Metals, 8240, 8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed) Charles Karch Date 7-2-90 Time 1:45pm
Received by: (signed) Joseph A. Myers Date 7-3-90 Time 0800

SHIPPING DETAILS

Delivered to Shipper by: Chasenda
Method of Shipment: Fed Express Airbill # _____
Received for Lab: RNAL Signed: Joseph A. Myers Date/Time 7-3-90 0800
Enseco Project No. 10259

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essex

Enseco Client: Giant Refinery

Project: RFI

Sampling Co.: Giant

Sampling Site: C10129

Team Leader: M. McCaslin

RNAL # 10259

CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

No.

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes No
3. Condition of Contents: Good
4. Sealed for Shipping by: C. Rosendale
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes No
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
7-2-90	10:50	RFI0903V5.0	Soil	2	Metals, 8240, 8270	
7-2-90	11:01	RFI0903V7.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:01	RFI0906V0.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:06	RFI0906V3.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:13	RFI0906V5.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:19	RFI0906V7.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:06	RFI0906D3.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:22	RFI0907V0.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:42	RFI0907V3.0	Soil	2	Metals, 8240, 8270	
7-2-90	12:46	RFI0907V5.0	Soil	2	Metals, 8240, 8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed) Charles Rosendale Date 7-2-90 1:45pm

Received by: (signed) Joseph G. Myers Date 7-3-90 0800

SHIPPING DETAILS

Delivered to Shipper by: C. Rosendale

Method of Shipment: Fed. Express Airbill # _____

Received for Lab: RNAL Signed: Joseph G. Myers Date/Time 7-3-90 0800

Enseco Project No. _____

CHAIN OF CUSTODY

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essey

Enseco Client, Giant Refinery

Project RFI

Sampling Co. August

Sampling Site Ciniza

Team Leader N. McCoskie

CMAL #10259

No.
SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes ☒ No ☐
3. Condition of Contents: Good
4. Sealed for Shipping by: C. Rosendale
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes ☐ No ☐
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

[illegible]

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed)	Received by: (signed)	Date	Time
1 <i>Chloe Randall</i>	<i>Joseph G Mayo</i>	7-2-90	1:45pm
2 _____		7-3-90	0800

SHIPPING DETAILS

Delivered to Shipper by: P. Rosendale
Method of Shipment: Fed Express Airbill # _____
Received for Lab: RMAC Signed: J. P. C. Myers Date/Time 2-3-90
2:50 PM

Section 9.0
RMAL No. 010190

ANALYTICAL RESULTS
FOR
GIANT REFINING
ENSECO-RMAL NO. 010190



JULY 30, 1990

Reviewed by:



Julie Essey



Sue Dalla

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- o Sample Description Information
- o Analytical Test Requests
- o Analytical Results
- o Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Due to interferences originating from non-target compounds, dilutions were performed for sample 010190-0010 by Method 8270. The reporting limits were raised accordingly.

All 8270 samples were prepped accordingly to SW-846 using 2.0 grams of sample followed by a 50 percent partition then concentration to 1.0 mL for analysis. With this prep method nominal reporting limits are generally 10000 ug/kg. After careful review of all chromatograms it has been determined that we can lower the nominal reporting limit to 5000 ug/kg for this project.

An analytical standard is not available for methyl chrysene. Furthermore, many isomers of this compound, including methyl benzantracenes and methyl triphenylenes, exist. These isomers are indistinguishable under the analytical condition of Method 8270. A selected ion current profile at mass 242 was performed to determine if any compounds corresponding to the molecular structure of methyl chrysene were present. All peaks which met this criteria

were summed. An estimated concentration of "total methyl chrysenes" was determined by comparing the sum of the peak areas to the internal standard and using a response factor of 1.0. Both the identification and quantification are highly suspect.

Total methyl chrysenes were not detected in any samples analyzed by Method 8270 for this project.

Enseco protocol states that samples analyzed by graphite furnace atomic absorption (GFAA), will have a spiked aliquot analyzed with each sample. If the spike recovery does not meet established criteria, the reporting limit for that analysis is raised proportionately. Poor spike recoveries of this type are typically due to interferences from the sample matrix.

In reviewing the GFAA metals data it is necessary to know what the nominal reporting limits are in order to determine whether or not those limits were raised due to matrix interference. The most common GFAA elements and their nominal reporting limits are listed in the table below. These are provided to facilitate the review of the GFAA metals data.

Common GFAA Elements

Reporting Limit / Units

<u>Element</u>	<u>Aqueous (mg/L)</u>	<u>Soil (mg/kg)</u>	<u>Waste (mg/kg)</u>	<u>Leachate (mg/L)</u>
Arsenic	0.005	0.5 **	0.5 **	0.05 **
Lead	0.005	0.5	0.5 **	0.05 **
Selenium	0.005	0.5	0.5	0.05
Thallium	0.005	0.5	0.5	0.05

** For the matrix listed, the preferred method for this element is by Method 6010

Mercury by Cold Vapor Atomic Absorption (CVAA), Method 245.1/7470/7471, and analytes performed by Inductively Coupled Plasma (ICP), Method 200.7/6010, are not subject to the same type of interferences as GFAA metals and therefore do not require a spiked aliquot for each sample. The nominal reporting limits for analytes by these methods are given in the method blank report. Typically a raised reporting limit by these methods is also due to matrix interferences. However, for all methods mentioned here, a raised reporting limit may also be the result of target analyte concentrations or blank contamination.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
Giant Refining

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	
010190-0001-SA	RFI1001V0.0	SOIL	28 JUN 90	07:15	29 JUN 90
010190-0002-SA	RFI1001V3.0	SOIL	28 JUN 90	07:34	29 JUN 90
010190-0003-SA	RFI1001D3.0	SOIL	28 JUN 90	07:34	29 JUN 90
010190-0004-SA	RFI1003V12.5	SOIL	28 JUN 90	08:01	29 JUN 90
010190-0005-SA	RFI1003V9.0	SOIL	28 JUN 90	08:24	29 JUN 90
010190-0006-SA	RFI1003V6.0	SOIL	28 JUN 90	08:35	29 JUN 90
010190-0007-SA	RFI1003V3.0	SOIL	28 JUN 90	08:45	29 JUN 90
010190-0008-SA	RFI1003V0.0	SOIL	28 JUN 90	08:50	29 JUN 90
010190-0009-SA	RFI1004V0.0	SOIL	28 JUN 90	08:53	29 JUN 90
010190-0010-SA	RFI1004V3.0	SOIL	28 JUN 90	09:01	29 JUN 90

ANALYTICAL TEST REQUESTS
for
Giant Refining

Lab ID: 010190	Group Code	Analysis Description	Custom Test?
0001 - 0010	A	Mercury, Cold Vapor AA	Y
		Prep - Mercury, Cold Vapor AA	N
		Arsenic, Furnace AA	N
		Prep - Total Metals, Furnace AA	N
		Selenium, Furnace AA	N
		ICP Metals (Total)	Y
		Prep - Total Metals, ICP	N
		Priority Pollutant Volatile Organics	Y
		GC Screen For Medium Level Soils	N
		Appendix IX Semivolatile Organics	Y
		Prep - Semivolatile Organics by GC/MS	N

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1001V0.0
Lab ID: 010190-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081313
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1001V0.0
Lab ID: 010190-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081313
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	101	%	--
4-Bromofluorobenzene	96	%	--
1,2-Dichloroethane-d4	99	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1001V3.0
Lab ID: 010190-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081314
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
 Client ID: RFI1001V3.0
 Lab ID: 010190-0002-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081314
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	101	%	--
4-Bromofluorobenzene	96	%	--
1,2-Dichloroethane-d4	98	%	--

ND = Not detected
 NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1001D3.0
Lab ID: 010190-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081315
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1001D3.0
Lab ID: 010190-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081315
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	102	%	--
4-Bromofluorobenzene	99	%	--
1,2-Dichloroethane-d4	97	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1003V12.5
 Lab ID: 010190-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081316
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
 NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V12.5
Lab ID: 010190-0004-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081316
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	98	%	--
4-Bromofluorobenzene	96	%	--
1,2-Dichloroethane-d4	100	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V9.0
Lab ID: 010190-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081317
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
trans-1,4-Dichloro-2-butene	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)**Method 8240**

Client Name: Giant Refining
Client ID: RFI1003V9.0
Lab ID: 010190-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081317
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
 Toluene-d8	 99	 %	 --
4-Bromofluorobenzene	99	%	--
1,2-Dichloroethane-d4	99	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RF11003V6.0
 Lab ID: 010190-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081318
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V6.0
Lab ID: 010190-0006-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081318
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	100	%	--
4-Bromofluorobenzene	101	%	--
1,2-Dichloroethane-d4	93	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V3.0
Lab ID: 010190-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081319
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V3.0
Lab ID: 010190-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081319
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	102	%	--
4-Bromofluorobenzene	102	%	--
1,2-Dichloroethane-d4	93	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V0.0
Lab ID: 010190-0008-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081320
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1003V0.0
Lab ID: 010190-0008-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081320
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	101	%	--
4-Bromofluorobenzene	98	%	--
1,2-Dichloroethane-d4	93	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RF11004V0.0
 Lab ID: 010190-0009-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081321
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V0.0
Lab ID: 010190-0009-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081321
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	104	%	--
4-Bromofluorobenzene	100	%	--
1,2-Dichloroethane-d4	92	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RF11004V3.0
 Lab ID: 010190-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081322
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	1700	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	14000	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	5600	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V3.0
Lab ID: 010190-0010-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081322
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	54000	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	5000
 Toluene-d8	 107	 %	 --
4-Bromofluorobenzene	102	%	--
1,2-Dichloroethane-d4	105	%	--

ND = Not detected
NA = Not applicable

Reported By: Michael Blades

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1001V0.0
Lab ID: 010190-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081313
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 15 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1001V0.0
 Lab ID: 010190-0001-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081313
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 15 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1001V0.0
Lab ID: 010190-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081313
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 15 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	80	%	--
2-Fluorobiphenyl	87	%	--
Terphenyl-d14	87	%	--
Phenol-d5	78	%	--
2-Fluorophenol	80	%	--
2,4,6-Tribromophenol	86	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1001V3.0
 Lab ID: 010190-0002-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081314
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1001V3.0
Lab ID: 010190-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081314
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1001V3.0
Lab ID: 010190-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081314
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	93	%	--
2-Fluorobiphenyl	103	%	--
Terphenyl-d14	118	%	--
Phenol-d5	90	%	--
2-Fluorophenol	90	%	--
2,4,6-Tribromophenol	88	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1001D3.0
 Lab ID: 010190-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081315
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11001D3.0
 Lab ID: 010190-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081315
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1001D3.0
Lab ID: 010190-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081315
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	91	%	--
2-Fluorobiphenyl	97	%	--
Terphenyl-d14	107	%	--
Phenol-d5	89	%	--
2-Fluorophenol	90	%	--
2,4,6-Tribromophenol	68	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francisc

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V12.5
Lab ID: 010190-0004-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081316
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1003V12.5
 Lab ID: 010190-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081316
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11003V12.5
 Lab ID: 010190-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081316
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro-benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	92	%	--
2-Fluorobiphenyl	97	%	--
Terphenyl-d14	110	%	--
Phenol-d5	89	%	--
2-Fluorophenol	92	%	--
2,4,6-Tribromophenol	65	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1003V9.0
 Lab ID: 010190-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081317
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V9.0
Lab ID: 010190-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081317
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V9.0
Lab ID: 010190-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081317
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	84	%	--
2-Fluorobiphenyl	92	%	--
Terphenyl-d14	104	%	--
Phenol-d5	84	%	--
2-Fluorophenol	86	%	--
2,4,6-Tribromophenol	61	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V6.0
Lab ID: 010190-0006-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081318
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V6.0
Lab ID: 010190-0006-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081318
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophchrone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V6.0
Lab ID: 010190-0006-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081318
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	76	%	--
2-Fluorobiphenyl	83	%	--
Terphenyl-d14	95	%	--
Phenol-d5	78	%	--
2-Fluorophenol	78	%	--
2,4,6-Tribromophenol	62	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1003V3.0
 Lab ID: 010190-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081319
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V3.0
Lab ID: 010190-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081319
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11003V3.0
 Lab ID: 010190-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081319
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	76	%	--
2-Fluorobiphenyl	82	%	--
Terphenyl-d14	91	%	--
Phenol-d5	76	%	--
2-Fluorophenol	77	%	--
2,4,6-Tribromophenol	59	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1003V0.0
Lab ID: 010190-0008-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081320
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RF11003V0.0
Lab ID: 010190-0008-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081320
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1003V0.0
 Lab ID: 010190-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081320
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	82	%	--
2-Fluorobiphenyl	89	%	--
Terphenyl-d14	103	%	--
Phenol-d5	82	%	--
2-Fluorophenol	85	%	--
2,4,6-Tribromophenol	69	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V0.0
 Lab ID: 010190-0009-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081321
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining

Client ID: RFI1004V0.0

Lab ID: 010190-0009-SA

Matrix: SOIL

Authorized: 29 JUN 90

Enseco ID: 1081321

Sampled: 28 JUN 90

Prepared: 08 JUL 90

Received: 29 JUN 90

Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V0.0
 Lab ID: 010190-0009-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081321
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	5000
Nitrobenzene-d5	73	%	--
2-Fluorobiphenyl	79	%	--
Terphenyl-d14	90	%	--
Phenol-d5	72	%	--
2-Fluorophenol	74	%	--
2,4,6-Tribromophenol	60	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RF11004V3.0
 Lab ID: 010190-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081322
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	25000
Acenaphthylene	ND	ug/kg	25000
Acetophenone	ND	ug/kg	25000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	25000
Anthracene	ND	ug/kg	25000
Benzo(a)anthracene	ND	ug/kg	25000
Benzo(b)fluoranthene	ND	ug/kg	25000
Benzo(k)fluoranthene	ND	ug/kg	25000
Benzo(g,h,i)perylene	ND	ug/kg	25000
Benzo(a)pyrene	ND	ug/kg	25000
Benzyl alcohol	ND	ug/kg	25000
bis(2-Chloroethoxy)-methane	ND	ug/kg	25000
bis(2-Chloroethyl) ether	ND	ug/kg	25000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	25000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	25000
4-Bromophenyl phenyl ether	ND	ug/kg	25000
Butyl benzyl phthalate	ND	ug/kg	25000
4-Chloroaniline	ND	ug/kg	25000
4-Chloro-3-methylphenol	ND	ug/kg	25000
2-Chloronaphthalene	ND	ug/kg	25000
2-Chlorophenol	ND	ug/kg	25000
4-Chlorophenyl phenyl ether	ND	ug/kg	25000
o-Cresol	ND	ug/kg	25000
m & p-Cresol(s)	ND	ug/kg	25000
Chrysene	ND	ug/kg	25000
Dibenz(a,h)anthracene	ND	ug/kg	25000
Di-n-butyl phthalate	ND	ug/kg	25000
1,2-Dichlorobenzene	ND	ug/kg	25000
1,3-Dichlorobenzene	ND	ug/kg	25000
1,4-Dichlorobenzene	ND	ug/kg	25000
3,3'-Dichlorobenzidine	ND	ug/kg	50000
2,4-Dichlorophenol	ND	ug/kg	25000
2,6-Dichlorophenol	ND	ug/kg	25000
Diethyl phthalate	ND	ug/kg	25000
p-Dimethylaminoazobenzene	ND	ug/kg	25000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1004V3.0
Lab ID: 010190-0010-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081322
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	25000
a,a-Dimethylphenethylamine	ND	ug/kg	25000
2,4-Dimethylphenol	ND	ug/kg	25000
Dimethyl phthalate	ND	ug/kg	25000
1,3-Dinitrobenzene	ND	ug/kg	25000
4,6-Dinitro-o-cresol	ND	ug/kg	120000
2,4-Dinitrophenol	ND	ug/kg	120000
2,4-Dinitrotoluene	ND	ug/kg	25000
2,6-Dinitrotoluene	ND	ug/kg	25000
Di-n-octyl phthalate	ND	ug/kg	25000
Diphenylamine	ND	ug/kg	25000
Ethyl methanesulfonate	ND	ug/kg	25000
Fluoranthene	ND	ug/kg	25000
Fluorene	ND	ug/kg	25000
Hexachlorobenzene	ND	ug/kg	25000
Hexachlorobutadiene	ND	ug/kg	25000
Hexachlorocyclopentadiene	ND	ug/kg	25000
Hexachloroethane	ND	ug/kg	25000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	25000
Isophorone	ND	ug/kg	25000
3-Methylcholanthrene	ND	ug/kg	25000
Methyl methanesulfonate	ND	ug/kg	25000
2-Methylnaphthalene	ND	ug/kg	25000
Naphthalene	ND	ug/kg	25000
1-Naphthylamine	ND	ug/kg	25000
2-Naphthylamine	ND	ug/kg	25000
2-Nitroaniline	ND	ug/kg	120000
3-Nitroaniline	ND	ug/kg	120000
4-Nitroaniline	ND	ug/kg	120000
Nitrobenzene	ND	ug/kg	25000
2-Nitrophenol	ND	ug/kg	25000
4-Nitrophenol	ND	ug/kg	120000
N-Nitroso-di-n-butylamine	ND	ug/kg	25000
N-Nitrosodimethylamine	ND	ug/kg	25000
N-Nitrosodiphenylamine	ND	ug/kg	25000
N-Nitroso-di-n-propylamine	ND	ug/kg	25000
N-Nitrosopiperidine	ND	ug/kg	25000
Pentachlorobenzene	ND	ug/kg	25000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V3.0
 Lab ID: 010190-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081322
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 16 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	120000
Pentachlorophenol	ND	ug/kg	120000
Phenacetin	ND	ug/kg	25000
Phenanthrene	ND	ug/kg	25000
Phenol	ND	ug/kg	25000
2-Picoline	ND	ug/kg	25000
Pronamide	ND	ug/kg	25000
Pyrene	ND	ug/kg	25000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	25000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	120000
1,2,4-Trichlorobenzene	ND	ug/kg	25000
2,4,5-Trichlorophenol	ND	ug/kg	120000
2,4,6-Trichlorophenol	ND	ug/kg	25000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	25000
1-Chloronaphthalene	ND	ug/kg	48000
1,2-Diphenylhydrazine	ND	ug/kg	25000
Nitrobenzene-d5	68	%	--
2-Fluorobiphenyl	84	%	--
Terphenyl-d14	84	%	--
Phenol-d5	65	%	--
2-Fluorophenol	70	%	--
2,4,6-Tribromophenol	66	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1001V0.0
 Lab ID: 010190-0001-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081313
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.97	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	372	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	0.70	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	60.1	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.0	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	10.3	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	11.1	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	7.0	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	972	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	16.3	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	81.3	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1001V3.0
 Lab ID: 010190-0002-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081314
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	ND	mg/kg	1.0	7060	12 JUL 90	17 JUL 90
Barium	107	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	0.70	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	6.1	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	3.6	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	5.9	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	5.5	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	6.7	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1310	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	14.0	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	14.7	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1001D3.0
 Lab ID: 010190-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081315
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	ND	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	105	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	7.8	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	4.6	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	7.4	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	6.3	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	9.1	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1660	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	16.3	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	17.7	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1003V12.5
Lab ID: 010190-0004-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081316
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	ND	mg/kg	1.0	7060	12 JUL 90	17 JUL 90
Barium	392	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	0.73	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	7.5	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	3.2	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	7.0	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	7.8	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	8.5	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1410	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	0.50	7740	12 JUL 90	17 JUL 90
Vanadium	17.5	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	16.1	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1003V9.0
 Lab ID: 010190-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081317
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.52	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	152	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	5.9	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	3.4	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	5.6	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	8.1	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	6.8	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1340	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	0.50	7740	12 JUL 90	17 JUL 90
Vanadium	14.3	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	13.9	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1003V6.0
 Lab ID: 010190-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081318
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.58	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	178	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	6.5	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.8	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	6.1	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	6.5	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	6.5	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1070	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	0.50	7740	12 JUL 90	17 JUL 90
Vanadium	12.9	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	13.0	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
Client ID: RF11003V3.0
Lab ID: 010190-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081319
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.90	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	292	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	0.65	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	6.1	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.0	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	4.3	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	5.5	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	5.4	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	856	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	0.50	7740	12 JUL 90	17 JUL 90
Vanadium	15.2	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	12.9	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1003V0.0
 Lab ID: 010190-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081320
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.65	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	317	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	0.96	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	9.5	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.6	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	7.4	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	8.4	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	6.5	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	1020	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	15.7	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	16.4	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1004V0.0
Lab ID: 010190-0009-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081321
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.60	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	280	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	0.93	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	ND	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	5.6	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.8	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	5.7	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	8.2	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	6.1	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	853	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	15.5	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	14.0	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1004V3.0
 Lab ID: 010190-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081322
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	12 JUL 90	16 JUL 90
Arsenic	0.64	mg/kg	0.50	7060	12 JUL 90	17 JUL 90
Barium	195	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Beryllium	0.79	mg/kg	0.20	6010	12 JUL 90	16 JUL 90
Cadmium	0.56	mg/kg	0.50	6010	12 JUL 90	16 JUL 90
Chromium	11.6	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Cobalt	2.2	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Copper	4.1	mg/kg	2.0	6010	12 JUL 90	16 JUL 90
Lead	7.0	mg/kg	5.0	6010	12 JUL 90	16 JUL 90
Mercury	ND	mg/kg	0.10	7471	12 JUL 90	13 JUL 90
Nickel	5.3	mg/kg	4.0	6010	12 JUL 90	16 JUL 90
Potassium	783	mg/kg	500	6010	12 JUL 90	16 JUL 90
Selenium	ND	mg/kg	1.0	7740	12 JUL 90	17 JUL 90
Vanadium	14.4	mg/kg	1.0	6010	12 JUL 90	16 JUL 90
Zinc	15.2	mg/kg	2.0	6010	12 JUL 90	16 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Sandra Jones

Approved By: Roxanne Sullivan

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

- 1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix
- 3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and
- 4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery ± 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference $+ 3$ standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010190-0001-SA	SOIL	8240-S	05 JUL 90-H	09 JUL 90-H2
010190-0002-SA	SOIL	8240-S	05 JUL 90-H	09 JUL 90-H2
010190-0003-SA	SOIL	8240-S	05 JUL 90-H	09 JUL 90-H2
010190-0004-SA	SOIL	8240-S	05 JUL 90-H	09 JUL 90-H2
010190-0005-SA	SOIL	8240-S	05 JUL 90-H	09 JUL 90-H2
010190-0006-SA	SOIL	8240-S	05 JUL 90-H	10 JUL 90-H
010190-0007-SA	SOIL	8240-S	05 JUL 90-H	10 JUL 90-H
010190-0008-SA	SOIL	8240-S	05 JUL 90-H	10 JUL 90-H
010190-0009-SA	SOIL	8240-S	10 JUL 90-H	10 JUL 90-H
010190-0010-SA	SOIL	8240-S	10 JUL 90-H	10 JUL 90-H

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Spiked	Concentration		AVG	Accuracy		Precision	
		DCS1	Measured DCS2		Average(%) DCS	Limits	(RPD) DCS	Limit
Category: 8240-S								
Matrix: SOIL								
QC Lot: 05 JUL 90-H								
Concentration Units: ug/kg								
1,1-Dichloroethene	5000	5220	5570	5400	108	59-172	6.5	22
Trichloroethene	5000	5420	5530	5480	110	62-137	2.0	24
Benzene	5000	5300	5430	5360	107	66-142	2.4	21
Toluene	5000	5240	5260	5250	105	59-139	0.4	21
Chlorobenzene	5000	5580	5610	5600	112	60-133	0.5	21

Category: 8240-S
 Matrix: SOIL
 QC Lot: 10 JUL 90-H
 Concentration Units: ug/kg

1,1-Dichloroethene	5000	4940	5230	5080	102	59-172	5.7 22
Trichloroethene	5000	5100	5290	5200	104	62-137	3.7 24
Benzene	5000	5250	5340	5300	106	66-142	1.7 21
Toluene	5000	5030	5430	5230	105	59-139	7.6 21
Chlorobenzene	5000	5050	5320	5180	104	60-133	5.2 21

Calculations are performed before rounding to avoid round-off errors in calculated results.

SINGLE CONTROL SAMPLE REPORT **Volatile Organics by GC/MS**

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8240-S

Matrix: SOIL

QC Lot: 05 JUL 90-H QC Run: 09 JUL 90-H2

Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	5120	102	70-121
4-Bromofluorobenzene	5000	4890	98	74-121
Toluene-d8	5000	5000	100	81-117

Category: 8240-S

Matrix: SOIL

QC Lot: 05 JUL 90-H QC Run: 10 JUL 90-H

Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	4760	95	70-121
4-Bromofluorobenzene	5000	5020	100	74-121
Toluene-d8	5000	5050	101	81-117

Category: 8240-S

Matrix: SOIL

QC Lot: 10 JUL 90-H QC Run: 10 JUL 90-H

Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	4760	95	70-121
4-Bromofluorobenzene	5000	5020	100	74-121
Toluene-d8	5000	5050	101	81-117

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Volatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 05 JUL 90-H QC Run: 09 JUL 90-H2			
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000
4-Methyl-2-pentanone			
(MIBK)	ND	ug/kg	1000

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 05 JUL 90-H QC Run: 09 JUL 90-H2			
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	5000

Test: 8240-PP-S
Matrix: SOIL
QC Lot: 05 JUL 90-H QC Run: 10 JUL 90-H

Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 05 JUL 90-H QC Run: 10 JUL 90-H			
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	5000

Test: 8240-PP-S
Matrix: SOIL
QC Lot: 10 JUL 90-H QC Run: 10 JUL 90-H

Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 10 JUL 90-H QC Run: 10 JUL 90-H			
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	500
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone (MEK)	ND	ug/kg	5000
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	5000

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010190-0001-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0002-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0003-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0004-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0005-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0006-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0007-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0008-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0009-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B
010190-0010-SA	SOIL	8270-S	08 JUL 90-B	08 JUL 90-B

DUPLICATE CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1			DCS	Limits	DCS	Limit
Category: 8270-S								
Matrix: SOIL								
QC Lot: 08 JUL 90-B								
Concentration Units: ug/kg								
Phenol	6670	5580	5740	5660	85	26- 90	2.8	35
2-Chlorophenol	6670	5560	5730	5640	85	25-102	3.0	50
1,4-Dichlorobenzene	3330	2190	2280	2240	67	28-104	4.0	27
N-Nitroso-di- n-propylamine	3330	2670	2760	2720	82	41-126	3.3	38
1,2,4-Trichlorobenzene	3330	2520	2620	2570	77	38-107	3.9	23
4-Chloro-3-methylphenol	6670	6280	6760	6520	98	26-103	7.4	33
Acenaphthene	3330	2550	2730	2640	79	31-137	6.8	19
4-Nitrophenol	6670	6740	7040	6890	103	11-114	4.4	50
2,4-Dinitrotoluene	3330	2980	3120	3050	92	28- 89	4.6	47
Pentachlorophenol	6670	6110	6200	6160	92	17-109	1.5	47
Pyrene	3330	2610	2860	2740	82	35-142	9.1	36

Calculations are performed before rounding to avoid round-off errors in calculated results.

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8270-S

Matrix: SOIL

QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B

Concentration Units: ug/kg

Nitrobenzene-d5	1670	1320	79	23-120
2-Fluorobiphenyl	1670	1330	80	30-115
Terphenyl-d14	1670	1490	89	18-137
2-Fluorophenol	3330	2540	76	25-121
Phenol-d5	3330	2530	76	24-113
2,4,6-Tribromophenol	3330	2940	88	19-122

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-B QC Run: 08 JUL 90-B			
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
1,2-Diphenylhydrazine	ND	ug/kg	5000

QC LOT ASSIGNMENT REPORT

Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010190-0001-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0001-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0001-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0001-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0002-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0002-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0002-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0002-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0003-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0003-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0003-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0003-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0004-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0004-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0004-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0004-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0005-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0005-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0005-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0005-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0006-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0006-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0006-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0006-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0007-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0007-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0007-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0007-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0008-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0008-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0008-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0008-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0009-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0009-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0009-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0009-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A
010190-0010-SA	SOIL	HG-CVAA-S	12 JUL 90-A	12 JUL 90-A
010190-0010-SA	SOIL	AS-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0010-SA	SOIL	SE-FAA-S	12 JUL 90-A	12 JUL 90-A
010190-0010-SA	SOIL	ICP-S	12 JUL 90-A	12 JUL 90-A

DUPLICATE CONTROL SAMPLE REPORT Metals Analysis and Preparation

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1			DCS	Limits	DCS	Limit
Category: HG-CVAA-S Matrix: SOIL QC Lot: 12 JUL 90-A Concentration Units: mg/kg								
Mercury	0.50	0.503	0.526	0.514	103	75-125	4.5	20
Category: AS-FAA-S Matrix: SOIL QC Lot: 12 JUL 90-A Concentration Units: mg/kg								
Arsenic	4.0	3.32	3.65	3.48	87	75-125	9.5	20
Category: SE-FAA-S Matrix: SOIL QC Lot: 12 JUL 90-A Concentration Units: mg/kg								
Selenium	1.0	0.830	0.820	0.825	83	75-125	1.2	20
Category: ICP-S Matrix: SOIL QC Lot: 12 JUL 90-A Concentration Units: mg/kg								
Aluminum	200	204	205	205	102	75-125	0.2	20
Antimony	50	47.5	47.0	47.2	94	75-125	1.0	20
Arsenic	50	44.3	42.7	43.5	87	75-125	3.5	20
Barium	200	183	182	182	91	75-125	0.8	20
Beryllium	5.0	4.91	5.02	4.96	99	75-125	2.4	20
Cadmium	5.0	4.22	4.13	4.18	84	75-125	2.2	20
Calcium	10000	8960	9040	9000	90	75-125	0.9	20
Chromium	20	20.0	19.7	19.8	99	75-125	1.4	20
Cobalt	50	41.1	41.4	41.2	82	75-125	0.7	20
Copper	25	21.9	22.6	22.3	89	75-125	3.0	20
Iron	100	98.8	98.0	98.4	98	75-125	0.9	20
Lead	50	40.5	41.3	40.9	82	75-125	1.9	20
Magnesium	5000	4620	4650	4630	93	75-125	0.8	20
Manganese	50	42.0	42.3	42.1	84	75-125	0.7	20
Nickel	50	41.2	41.2	41.2	82	75-125	0.0	20
Potassium	5000	4560	4640	4600	92	75-125	1.8	20

Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Spiked	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1				DCS	Limits	DCS	Limit
Category: ICP-S									
Matrix: SOIL									
QC Lot: 12 JUL 90-A									
Concentration Units: mg/kg									
Silver	5.0	4.49	4.73	4.61	92	75-125	5.2	20	
Sodium	10000	9570	9780	9680	97	75-125	2.2	20	
Vanadium	50	50.6	50.5	50.6	101	75-125	0.1	20	
Zinc	50	41.9	41.5	41.7	83	75-125	0.9	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-S Matrix: SOIL QC Lot: 12 JUL 90-A QC Run: 12 JUL 90-A			
Mercury	ND	mg/kg	0.10
Test: AS-FAA-S Matrix: SOIL QC Lot: 12 JUL 90-A QC Run: 12 JUL 90-A			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-S Matrix: SOIL QC Lot: 12 JUL 90-A QC Run: 12 JUL 90-A			
Selenium	ND	mg/kg	0.50
Test: ICP-S Matrix: SOIL QC Lot: 12 JUL 90-A QC Run: 12 JUL 90-A			
Antimony	ND	mg/kg	6.0
Barium	ND	mg/kg	1.0
Beryllium	ND	mg/kg	0.20
Cadmium	ND	mg/kg	0.50
Chromium	ND	mg/kg	1.0
Cobalt	ND	mg/kg	1.0
Copper	ND	mg/kg	2.0
Lead	ND	mg/kg	5.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Vanadium	ND	mg/kg	1.0
Zinc	ND	mg/kg	2.0

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essex

Enseco Client Giant Refinery

Project RFL

Sampling Co. Giant

Sampling Site Ciniza

Team Leader C Rosendale

RNAL # 10190

CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
Yes ☒ No ☐
2. Seal Intact Upon Receipt by Sampling Co.: _____
3. Condition of Contents: Good
4. Sealed for Shipping by: C Rosendale
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes ☐ No ☐
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-28-90	7:15	RFI1001V0.0	SOIL	2	Metals, 8240, 8270	
6-28-90	7:34	RFI1001V3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	7:34	RFI1001D3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	8:01	RFI1003V12.5	SOIL	2	Metals, 8240, 8270	
6-28-90	8:24	RFI1003V9.0	SOIL	2	Metals, 8240, 8270	
6-28-90	8:35	RFI1003V6.0	SOIL	2	Metals, 8240, 8270	
6-28-90	8:45	RFI1003V3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	8:50	RFI1003V0.0	SOIL	2	Metals, 8240, 8270	
6-28-90	8:53	RFI1004V0.0	SOIL	2	Metals, 8240, 8270	
6-28-90	9:01	RFI1004V3.0	SOIL	2	Metals, 8240, 8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed) Charles Marshall Date 6-28-90 Time 2:00pm

2 _____

3 _____

SHIPPING DETAILS

Delivered to Shipper by: C Rosendale

Method of Shipment: Fed Express Airbill # _____

Received for Lab: RNAL Signed: Bob Ried Date/Time 29 JUN 90 4:44p

Enseco Project No. 10190

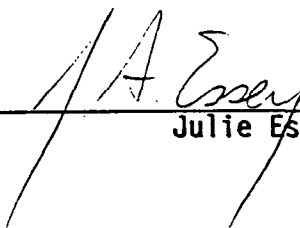
Section 9.0
RMAL No. 010192

ANALYTICAL RESULTS
FOR
GIANT REFINING
ENSECO-RMAL NO. 010192



AUGUST 2, 1990

Reviewed by:


Julie Essey

Enseco Incorporated
4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Fax: 303/431-7171

Introduction

This report presents the analytical results as well as supporting information to aid in the evaluation and interpretation of the data and is arranged in the following order:

- o Sample Description Information
- o Analytical Test Requests
- o Analytical Results
- o Quality Control Report

Consistent with directives in the CLP protocol in SW-846 and other EPA methods, all GC/MS analyses were performed so that the maximum concentration of sample was analyzed. Some samples required dilutions to avoid saturation of the detector, to achieve linearity for a specific target compound or to reduce matrix interferences. As stated in Section 7.5.4 of Method 8270, 7.4.1.16 of Method 8240 and Exhibit E of the CLP protocol these dilutions must be performed. The reporting limits for these samples are therefore proportionate to the dilution required. Surrogate compounds may not be measurable in samples which have been diluted.

Due to interferences originating from non-target and/or target compounds, dilutions were performed for samples 010192-0001 through -0003 and -0006 through -0007 by Method 8240. Likewise, dilutions were made to samples 010192-0001, -0006, and -0011 by Method 8270. Because of these dilutions, the surrogates by Method 8270 were not recoverable for sample 010192-0006 and are, therefore, reported as ND (not detected). In all cases, the reporting limits were raised accordingly.

All 8270 samples were prepped according to SW-846 using 2.0 grams of sample followed by a 50% partition then concentration to 1.0 mL for analysis. With this prep method nominal reporting limits are generally 10000 ug/kg. After careful review of all chromatogram it has been determined that we can lower the nominal reporting limit to 5000 ug/kg for this project.

The Duplicate Control Sample (DCS) QC Lot 08 JUL 90-C by Method 8270 had 2,4-Dinitrophenol slightly above Enseco's established limits. The quantitation was rechecked and found to be correct. Based on a thorough review of the data, it was determined that the sample results were not affected. It should be noted that control limits are based on statistical data and do not always represent the best possible recoveries.

Enseco protocol states that samples analyzed by graphite furnace atomic absorption (GFAA), will have a spiked aliquot analyzed with each sample. If the spike recovery does not meet established criteria, the reporting limit for that analysis is raised proportionately. Poor spike recoveries of this type are typically due to interferences from the sample matrix.

In reviewing the GFAA metals data it is necessary to know what the nominal reporting limits are in order to determine whether or not those limits were raised due to matrix interference. The most common GFAA elements and their nominal reporting limits are listed in the table below. These are provided to facilitate the review of the GFAA metals data.

Common GFAA Elements

Reporting Limit / Units

<u>Element</u>	<u>Aqueous (mg/L)</u>	<u>Soil (mg/kg)</u>	<u>Waste (mg/kg)</u>	<u>Leachate (mg/L)</u>
Arsenic	0.005	0.5 **	0.5 **	0.05 **
Lead	0.005	0.5	0.5 **	0.05 **
Selenium	0.005	0.5	0.5	0.05
Thallium	0.005	0.5	0.5	0.05

** For the matrix listed, the preferred method for this element is by Method 6010

Mercury by Cold Vapor Atomic Absorption (CVAA), Method 245.1/7470/7471, and analytes performed by Inductively Coupled Plasma (ICP), Method 200.7/6010, are not subject to the same type of interferences as GFAA metals and therefore do not require a spiked aliquot for each sample. The nominal reporting limits for analytes by these methods are given in the method blank report. Typically a raised reporting limit by these methods is also due to matrix interferences. However, for all methods mentioned here, a raised reporting limit may also be the result of target analyte concentrations or blank contamination.

Sample Description Information

The Sample Description Information lists all of the samples received in this project together with the internal laboratory identification number assigned for each sample. Each project received at Enseco - RMAL is assigned a unique six digit number. Samples within the project are numbered sequentially. The laboratory identification number is a combination of the six digit project code and the sample sequence number.

Also given in the Sample Description Information is the Sample Type (matrix), Date of Sampling (if known) and Date of Receipt at the laboratory.

Analytical Test Requests

The Analytical Test Requests lists the analyses that were performed on each sample. The Custom Test column indicates where tests have been modified to conform to the specific requirements of this project.

SAMPLE DESCRIPTION INFORMATION
for
Giant Refining

Lab ID	Client ID	Matrix	Sampled Date	Time	Received Date
010192-0001-SA	RFI1004V6.0	SOIL	28 JUN 90	09:07	29 JUN 90
010192-0002-SA	RFI1004V9.0	SOIL	28 JUN 90	09:32	29 JUN 90
010192-0003-SA	RFI1004V12.5	SOIL	28 JUN 90	09:45	29 JUN 90
010192-0004-SA	RFI1005V0.0	SOIL	28 JUN 90	10:26	29 JUN 90
010192-0005-SA	RFI1005V3.0 ✓	SOIL	28 JUN 90	10:55	29 JUN 90
010192-0006-SA	RFI1005V6.0	SOIL	28 JUN 90	11:03	29 JUN 90
010192-0007-SA	RFI1005V9.0	SOIL	28 JUN 90	11:18	29 JUN 90
010192-0008-SA	RFI1005V12.5	SOIL	28 JUN 90	11:34	29 JUN 90
010192-0009-SA	RFI100503.0 - D	SOIL	28 JUN 90	10:55	29 JUN 90
010192-0010-SA	RFI1002V0.0	SOIL	28 JUN 90	11:50	29 JUN 90
010192-0011-SA	RFI1002V3.0	SOIL	28 JUN 90	11:58	29 JUN 90
010192-0012-SA	RFI1002V6.0	SOIL	28 JUN 90	12:03	29 JUN 90
010192-0013-SA	RFI1002V9.0	SOIL	28 JUN 90	12:13	29 JUN 90
010192-0014-SA	RFI1002V12.5	SOIL	28 JUN 90	12:40	29 JUN 90
010192-0015-SA	RFI1005D12.5	SOIL	28 JUN 90	11:34	29 JUN 90
010192-0016-SA	RFI1002E3.0	AQUEOUS	28 JUN 90	12:00	29 JUN 90
010192-0017-SA	TRIP BLANK	AQUEOUS	28 JUN 90		29 JUN 90

ANALYTICAL TEST REQUESTS

for
Giant Refining

Lab ID:	Group Code	Analysis Description	Custom Test?
010192			
0001 - 0015	A	Mercury, Cold Vapor AA Prep - Mercury, Cold Vapor AA Arsenic, Furnace AA Prep - Total Metals, Furnace AA Selenium, Furnace AA ICP Metals (Total) Prep - Total Metals, ICP Priority Pollutant Volatile Organics GC Screen For Medium Level Soils Appendix IX Semivolatile Organics Prep - Semivolatile Organics by GC/MS	Y N N N N Y N Y N Y Y N
0016	B	Prep - Total Metals, Furnace AA Arsenic, Furnace AA (Total) Selenium, Furnace AA (Total) Mercury, Cold Vapor AA (Total) Prep - Mercury, Cold Vapor AA (Total) ICP Metals (Total) Prep - Total Metals, ICP Prep - Semivolatile Organics by GC/MS Priority Pollutant Volatile Organics Prep-Volatile Organics by GC/MS Appendix IX Semivolatile Organics Lead, Furnace AA (Total)	N N N N N Y N N Y N Y N
0017	C	Prep-Volatile Organics by GC/MS Priority Pollutant Volatile Organics	N Y

Analytical Results

The analytical results for this project are presented in the following data tables. Each data table includes sample identification information, and when available and appropriate, dates sampled, received, authorized, prepared and analyzed. The authorization data is the date when the project was defined by the client such that laboratory work could begin.

Data sheets contain a listing of the parameters measured in each test, the analytical results and the Enseco reporting limit. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis, i.e. no correction is made for moisture content.

Enseco-RMAL is no longer routinely blank-correcting analytical data. Uncorrected analytical results are reported, along with associated blank results, for all organic and metals analyses. Analytical results and blank results are reported for conventional inorganic parameters as specified in the method. This policy is described in detail in the Enseco Incorporated Quality Assurance Program Plan for Environmental Chemical Monitoring, Revision 3.3, April, 1989.

The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is provided subsequently.

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1004V6.0
 Lab ID: 010192-0001-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081323
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	100000
Bromomethane	ND	ug/kg	100000
Vinyl chloride	ND	ug/kg	100000
Chloroethane	ND	ug/kg	100000
Methylene chloride	ND	ug/kg	50000
1,1-Dichloroethene	ND	ug/kg	50000
1,1-Dichloroethane	ND	ug/kg	50000
1,2-Dichloroethene (cis/trans)	ND	ug/kg	50000
Chloroform	ND	ug/kg	50000
1,2-Dichloroethane	ND	ug/kg	50000
1,1,1-Trichloroethane	ND	ug/kg	50000
Carbon tetrachloride	ND	ug/kg	50000
Bromodichloromethane	ND	ug/kg	50000
1,2-Dichloropropane	ND	ug/kg	50000
trans-1,3-Dichloropropene	ND	ug/kg	50000
Trichloroethene	ND	ug/kg	50000
Dibromochloromethane	ND	ug/kg	50000
1,1,2-Trichloroethane	ND	ug/kg	50000
Benzene	ND	ug/kg	50000
cis-1,3-Dichloropropene	ND	ug/kg	50000
2-Chloroethyl vinyl ether	ND	ug/kg	100000
Bromoform	ND	ug/kg	50000
1,1,2,2-Tetrachloroethane	ND	ug/kg	50000
Tetrachloroethene	ND	ug/kg	50000
Toluene	220000	ug/kg	50000
Chlorobenzene	ND	ug/kg	50000
Ethylbenzene	81000	ug/kg	50000
Acetone	ND	ug/kg	500000
Carbon disulfide	ND	ug/kg	50000
Acrolein	ND	ug/kg	1000000
Acrylonitrile	ND	ug/kg	1000000
Dibromomethane	ND	ug/kg	50000
trans-1,4-Dichloro- 2-butene	ND	ug/kg	50000
Dichlorodifluoromethane	ND	ug/kg	200000
trans-1,2-Dichloroethene	ND	ug/kg	50000
Ethanol	ND	ug/kg	1000000
Iodomethane	ND	ug/kg	50000
2-Butanone	ND	ug/kg	500000

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ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V6.0
Lab ID: 010192-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081323
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	100000
Styrene	ND	ug/kg	50000
Trichlorofluoromethane	ND	ug/kg	50000
1,2,3-Trichloropropane	ND	ug/kg	50000
Vinyl acetate	ND	ug/kg	100000
Xylenes (total)	470000	ug/kg	50000
2-Hexanone	ND	ug/kg	100000
Ethyl methacrylate	ND	ug/kg	100000
Toluene-d8	100	%	--
4-Bromofluorobenzene	96	%	--
1,2-Dichloroethane-d4	97	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V9.0
Lab ID: 010192-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081324
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	25000
Bromomethane	ND	ug/kg	25000
Vinyl chloride	ND	ug/kg	25000
Chloroethane	ND	ug/kg	25000
Methylene chloride	ND	ug/kg	12000
1,1-Dichloroethene	ND	ug/kg	12000
1,1-Dichloroethane	ND	ug/kg	12000
1,2-Dichloroethene	ND	ug/kg	12000
(cis/trans)	ND	ug/kg	12000
Chloroform	ND	ug/kg	12000
1,2-Dichloroethane	ND	ug/kg	12000
1,1,1-Trichloroethane	ND	ug/kg	12000
Carbon tetrachloride	ND	ug/kg	12000
Bromodichloromethane	ND	ug/kg	12000
1,2-Dichloropropane	ND	ug/kg	12000
trans-1,3-Dichloropropene	ND	ug/kg	12000
Trichloroethene	ND	ug/kg	12000
Dibromochloromethane	ND	ug/kg	12000
1,1,2-Trichloroethane	ND	ug/kg	12000
Benzene	14000	ug/kg	12000
cis-1,3-Dichloropropene	ND	ug/kg	12000
2-Chloroethyl vinyl ether	ND	ug/kg	25000
Bromoform	ND	ug/kg	12000
1,1,2,2-Tetrachloroethane	ND	ug/kg	12000
Tetrachloroethene	ND	ug/kg	12000
Toluene	120000	ug/kg	12000
Chlorobenzene	ND	ug/kg	12000
Ethylbenzene	43000	ug/kg	12000
Acetone	ND	ug/kg	120000
Carbon disulfide	ND	ug/kg	12000
Acrolein	ND	ug/kg	250000
Acrylonitrile	ND	ug/kg	250000
Dibromomethane	ND	ug/kg	12000
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	12000
Dichlorodifluoromethane	ND	ug/kg	50000
trans-1,2-Dichloroethene	ND	ug/kg	12000
Ethanol	ND	ug/kg	250000
Iodomethane	ND	ug/kg	12000
2-Butanone	ND	ug/kg	120000

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ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V9.0
Lab ID: 010192-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081324
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	25000
Styrene	ND	ug/kg	12000
Trichlorofluoromethane	ND	ug/kg	12000
1,2,3-Trichloropropane	ND	ug/kg	12000
Vinyl acetate	ND	ug/kg	25000
Xylenes (total)	310000	ug/kg	12000
2-Hexanone	ND	ug/kg	25000
Ethyl methacrylate	ND	ug/kg	25000
Toluene-d8	101	%	--
4-Bromofluorobenzene	95	%	--
1,2-Dichloroethane-d4	87	%	--

ND = Not detected
NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V12.5
Lab ID: 010192-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081325
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	4000
Bromomethane	ND	ug/kg	4000
Vinyl chloride	ND	ug/kg	4000
Chloroethane	ND	ug/kg	4000
Methylene chloride	ND	ug/kg	2000
1,1-Dichloroethene	ND	ug/kg	2000
1,1-Dichloroethane	ND	ug/kg	2000
1,2-Dichloroethene	ND	ug/kg	2000
(cis/trans)	ND	ug/kg	2000
Chloroform	ND	ug/kg	2000
1,2-Dichloroethane	ND	ug/kg	2000
1,1,1-Trichloroethane	ND	ug/kg	2000
Carbon tetrachloride	ND	ug/kg	2000
Bromodichloromethane	ND	ug/kg	2000
1,2-Dichloropropane	ND	ug/kg	2000
trans-1,3-Dichloropropene	ND	ug/kg	2000
Trichloroethene	ND	ug/kg	2000
Dibromochloromethane	ND	ug/kg	2000
1,1,2-Trichloroethane	ND	ug/kg	2000
Benzene	ND	ug/kg	2000
cis-1,3-Dichloropropene	ND	ug/kg	2000
2-Chloroethyl vinyl ether	ND	ug/kg	4000
Bromoform	ND	ug/kg	2000
1,1,2,2-Tetrachloroethane	ND	ug/kg	2000
Tetrachloroethene	ND	ug/kg	2000
Toluene	ND	ug/kg	2000
Chlorobenzene	ND	ug/kg	2000
Ethylbenzene	ND	ug/kg	2000
Acetone	ND	ug/kg	20000
Carbon disulfide	ND	ug/kg	2000
Acrolein	ND	ug/kg	40000
Acrylonitrile	ND	ug/kg	40000
Dibromomethane	ND	ug/kg	2000
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	2000
Dichlorodifluoromethane	ND	ug/kg	8000
trans-1,2-Dichloroethene	ND	ug/kg	2000
Ethanol	ND	ug/kg	40000
Iodomethane	ND	ug/kg	2000
2-Butanone	ND	ug/kg	20000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1004V12.5
Lab ID: 010192-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081325
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	4000
Styrene	ND	ug/kg	2000
Trichlorofluoromethane	ND	ug/kg	2000
1,2,3-Trichloropropane	ND	ug/kg	2000
Vinyl acetate	ND	ug/kg	4000
Xylenes (total)	ND	ug/kg	2000
2-Hexanone	ND	ug/kg	4000
Ethyl methacrylate	ND	ug/kg	4000
Toluene-d8	97	%	--
4-Bromofluorobenzene	100	%	--
1,2-Dichloroethane-d4	95	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1005V0.0
Lab ID: 010192-0004-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081326
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1005V0.0
Lab ID: 010192-0004-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081326
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	97	%	--
4-Bromofluorobenzene	103	%	--
1,2-Dichloroethane-d4	100	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V3.0
 Lab ID: 010192-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081327
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1005V3.0
Lab ID: 010192-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081327
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	96	%	--
4-Bromofluorobenzene	107	%	--
1,2-Dichloroethane-d4	93	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics



Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V6.0
 Lab ID: 010192-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081328
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	67000
Bromomethane	ND	ug/kg	67000
Vinyl chloride	ND	ug/kg	67000
Chloroethane	ND	ug/kg	67000
Methylene chloride	ND	ug/kg	34000
1,1-Dichloroethene	ND	ug/kg	34000
1,1-Dichloroethane	ND	ug/kg	34000
1,2-Dichloroethene (cis/trans)	ND	ug/kg	34000
Chloroform	ND	ug/kg	34000
1,2-Dichloroethane	ND	ug/kg	34000
1,1,1-Trichloroethane	ND	ug/kg	34000
Carbon tetrachloride	ND	ug/kg	34000
Bromodichloromethane	ND	ug/kg	34000
1,2-Dichloropropane	ND	ug/kg	34000
trans-1,3-Dichloropropene	ND	ug/kg	34000
Trichloroethene	ND	ug/kg	34000
Dibromochloromethane	ND	ug/kg	34000
1,1,2-Trichloroethane	ND	ug/kg	34000
Benzene	37000	ug/kg	34000
cis-1,3-Dichloropropene	ND	ug/kg	34000
2-Chloroethyl vinyl ether	ND	ug/kg	67000
Bromoform	ND	ug/kg	34000
1,1,2,2-Tetrachloroethane	ND	ug/kg	34000
Tetrachloroethene	ND	ug/kg	34000
Toluene	290000	ug/kg	34000
Chlorobenzene	ND	ug/kg	34000
Ethylbenzene	76000	ug/kg	34000
Acetone	ND	ug/kg	340000
Carbon disulfide	ND	ug/kg	34000
Acrolein	ND	ug/kg	670000
Acrylonitrile	ND	ug/kg	670000
Dibromomethane	ND	ug/kg	34000
trans-1,4-Dichloro-2-butene	ND	ug/kg	34000
Dichlorodifluoromethane	ND	ug/kg	130000
trans-1,2-Dichloroethene	ND	ug/kg	34000
Ethanol	ND	ug/kg	670000
Iodomethane	ND	ug/kg	34000
2-Butanone	ND	ug/kg	340000

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ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V6.0
 Lab ID: 010192-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081328
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 11 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	67000
Styrene	ND	ug/kg	34000
Trichlorofluoromethane	ND	ug/kg	34000
1,2,3-Trichloropropane	ND	ug/kg	34000
Vinyl acetate	ND	ug/kg	67000
Xylenes (total)	540000	ug/kg	34000
2-Hexanone	ND	ug/kg	67000
Ethyl methacrylate	ND	ug/kg	67000
Toluene-d8	101	%	--
4-Bromofluorobenzene	99	%	--
1,2-Dichloroethane-d4	95	%	--

ND = Not detected
 NA = Not applicable

Reported By: Terry Riddle

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1005V9.0
Lab ID: 010192-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081329
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	2000
Bromomethane	ND	ug/kg	2000
Vinyl chloride	ND	ug/kg	2000
Chloroethane	ND	ug/kg	2000
Methylene chloride	ND	ug/kg	1000
1,1-Dichloroethene	ND	ug/kg	1000
1,1-Dichloroethane	ND	ug/kg	1000
1,2-Dichloroethene	ND	ug/kg	1000
(cis/trans)	ND	ug/kg	1000
Chloroform	ND	ug/kg	1000
1,2-Dichloroethane	ND	ug/kg	1000
1,1,1-Trichloroethane	ND	ug/kg	1000
Carbon tetrachloride	ND	ug/kg	1000
Bromodichloromethane	ND	ug/kg	1000
1,2-Dichloropropane	ND	ug/kg	1000
trans-1,3-Dichloropropene	ND	ug/kg	1000
Trichloroethene	ND	ug/kg	1000
Dibromochloromethane	ND	ug/kg	1000
1,1,2-Trichloroethane	ND	ug/kg	1000
Benzene	ND	ug/kg	1000
cis-1,3-Dichloropropene	ND	ug/kg	1000
2-Chloroethyl vinyl ether	ND	ug/kg	2000
Bromoform	ND	ug/kg	1000
1,1,2,2-Tetrachloroethane	ND	ug/kg	1000
Tetrachloroethene	ND	ug/kg	1000
Toluene	2600	ug/kg	1000
Chlorobenzene	ND	ug/kg	1000
Ethylbenzene	1200	ug/kg	1000
Acetone	ND	ug/kg	10000
Carbon disulfide	ND	ug/kg	1000
Acrolein	ND	ug/kg	20000
Acrylonitrile	ND	ug/kg	20000
Dibromomethane	ND	ug/kg	1000
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	1000
Dichlorodifluoromethane	ND	ug/kg	4000
trans-1,2-Dichloroethene	ND	ug/kg	1000
Ethanol	ND	ug/kg	20000
Iodomethane	ND	ug/kg	1000
2-Butanone	ND	ug/kg	10000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V9.0
 Lab ID: 010192-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081329
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	2000
Styrene	ND	ug/kg	1000
Trichlorofluoromethane	ND	ug/kg	1000
1,2,3-Trichloropropane	ND	ug/kg	1000
Vinyl acetate	ND	ug/kg	2000
Xylenes (total)	9700	ug/kg	1000
2-Hexanone	ND	ug/kg	2000
Ethyl methacrylate	ND	ug/kg	2000
Toluene-d8	97	%	--
4-Bromofluorobenzene	106	%	--
1,2-Dichloroethane-d4	98	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V12.5
 Lab ID: 010192-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081330
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	980	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1005V12.5
 Lab ID: 010192-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081330
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 08 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	1700	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	97	%	--
4-Bromofluorobenzene	109	%	--
1,2-Dichloroethane-d4	97	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI100503.0
Lab ID: 010192-0009-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081331
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene (cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro- 2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI100503.0
Lab ID: 010192-0009-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081331
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	98	%	--
4-Bromofluorobenzene	110	%	--
1,2-Dichloroethane-d4	102	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V0.0
 Lab ID: 010192-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081332
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1002V0.0
Lab ID: 010192-0010-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081332
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	96	%	--
4-Bromofluorobenzene	112	%	--
1,2-Dichloroethane-d4	97	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V3.0
 Lab ID: 010192-0011-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081333
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

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ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V3.0
 Lab ID: 010192-0011-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081333
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	96	%	--
4-Bromofluorobenzene	111	%	--
1,2-Dichloroethane-d4	97	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1002V6.0
Lab ID: 010192-0012-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081334
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

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ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V6.0
 Lab ID: 010192-0012-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081334
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	96	%	--
4-Bromofluorobenzene	100	%	--
1,2-Dichloroethane-d4	100	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V9.0
 Lab ID: 010192-0013-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081336
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-	ND	ug/kg	500
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V9.0
 Lab ID: 010192-0013-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081336
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	98	%	--
4-Bromofluorobenzene	105	%	--
1,2-Dichloroethane-d4	100	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V12.5
 Lab ID: 010192-0014-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081337
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-	ND	ug/kg	500
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 8240

Client Name: Giant Refining
 Client ID: RFI1002V12.5
 Lab ID: 010192-0014-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081337
 Sampled: 28 JUN 90
 Prepared: 05 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	99	%	--
4-Bromofluorobenzene	102	%	--
1,2-Dichloroethane-d4	99	%	--

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 8240

Client Name: Giant Refining
Client ID: RFI1005D12.5
Lab ID: 010192-0015-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081339
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	680	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 8240

Client Name: Giant Refining
Client ID: RFI1005D12.5
Lab ID: 010192-0015-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081339
Sampled: 28 JUN 90
Prepared: 05 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	980	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000
Toluene-d8	97	%	--
4-Bromofluorobenzene	104	%	--
1,2-Dichloroethane-d4	94	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Metals

Total Metals

Client Name: Giant Refining
Client ID: RF11005D12.5
Lab ID: 010192-0015-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081339
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	124	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.1	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	3.9	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	7.8	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	16.0	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	6.9	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1010	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	27 JUL 90	26 JUL 90
Vanadium	14.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	12.4	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Priority Pollutant Volatile Organics

Method 624

Client Name: Giant Refining
 Client ID: RFI1002E3.0
 Lab ID: 010192-0016-SA
 Matrix: AQUEOUS
 Authorized: 29 JUN 90

Enseco ID: 1081342
 Sampled: 28 JUN 90
 Prepared: 06 JUL 90

Received: 29 JUN 90
 Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene			
(cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Acetone	12	ug/L	10
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Carbon disulfide	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-			
2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
trans-1,2-Dichloroethene	ND	ug/L	5.0
Ethanol	ND	ug/L	100
Iodomethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	10

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)

Method 624

Client Name: Giant Refining
Client ID: RFI1002E3.0
Lab ID: 010192-0016-SA
Matrix: AQUEOUS
Authorized: 29 JUN 90

Enseco ID: 1081342
Sampled: 28 JUN 90
Prepared: 06 JUL 90

Received: 29 JUN 90
Analyzed: 09 JUL 90

Parameter	Result	Units	Reporting Limit
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10
Styrene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Ethyl methacrylate	ND	ug/L	10
Toluene-d8	98	%	--
4-Bromofluorobenzene	106	%	--
1,2-Dichloroethane-d4	101	%	--

ND = Not detected
NA = Not applicable

Reported By: Keith Beauvais

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics

Method 624

Client Name: Giant Refining
 Client ID: TRIP BLANK
 Lab ID: 010192-0017-SA
 Matrix: AQUEOUS
 Authorized: 29 JUN 90

Enseco ID: 1081343
 Sampled: 28 JUN 90
 Prepared: 06 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene			
(cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Acetone	ND	ug/L	50
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Carbon disulfide	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-			
2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	20
Ethanol	ND	ug/L	100
Iodomethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	50
4-Methyl-2-pentanone			
(MIBK)	ND	ug/L	10

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Shawn Kassner

Approved By: Jeff Lowry

Priority Pollutant Volatile Organics (CONT.)



Method 624

Client Name: Giant Refining
 Client ID: TRIP BLANK
 Lab ID: 010192-0017-SA
 Matrix: AQUEOUS
 Authorized: 29 JUN 90

Enseco ID: 1081343
 Sampled: 28 JUN 90
 Prepared: 06 JUL 90

Received: 29 JUN 90
 Analyzed: 10 JUL 90

Parameter	Result	Units	Reporting Limit
Styrene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
Ethyl methacrylate	ND	ug/L	10
2-Hexanone	ND	ug/L	10
Toluene-d8	100	%	--
4-Bromofluorobenzene	98	%	--
1,2-Dichloroethane-d4	105	%	--

ND = Not detected
 NA = Not applicable

Reported By: Shawn Kassner

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1004V6.0
Lab ID: 010192-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081323
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	10000
Acenaphthylene	ND	ug/kg	10000
Acetophenone	ND	ug/kg	10000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	10000
Anthracene	ND	ug/kg	10000
Benzo(a)anthracene	ND	ug/kg	10000
Benzo(b)fluoranthene	ND	ug/kg	10000
Benzo(k)fluoranthene	ND	ug/kg	10000
Benzo(g,h,i)perylene	ND	ug/kg	10000
Benzo(a)pyrene	ND	ug/kg	10000
Benzyl alcohol	ND	ug/kg	10000
bis(2-Chloroethoxy)-methane	ND	ug/kg	10000
bis(2-Chloroethyl) ether	ND	ug/kg	10000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	10000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	10000
4-Bromophenyl phenyl ether	ND	ug/kg	10000
Butyl benzyl phthalate	ND	ug/kg	10000
4-Chloroaniline	ND	ug/kg	10000
4-Chloro-3-methylphenol	ND	ug/kg	10000
2-Chloronaphthalene	ND	ug/kg	10000
2-Chlorophenol	ND	ug/kg	10000
4-Chlorophenyl phenyl ether	ND	ug/kg	10000
o-Cresol	16000	ug/kg	10000
m & p-Cresol(s)	26000	ug/kg	10000
Chrysene	ND	ug/kg	10000
Dibenz(a,h)anthracene	ND	ug/kg	10000
Di-n-butyl phthalate	ND	ug/kg	10000
1,2-Dichlorobenzene	ND	ug/kg	10000
1,3-Dichlorobenzene	ND	ug/kg	10000
1,4-Dichlorobenzene	ND	ug/kg	10000
3,3'-Dichlorobenzidine	ND	ug/kg	20000
2,4-Dichlorophenol	ND	ug/kg	10000
2,6-Dichlorophenol	ND	ug/kg	10000
Diethyl phthalate	ND	ug/kg	10000
p-Dimethylaminoazobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V6.0
 Lab ID: 010192-0001-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081323
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	10000
a,a-Dimethylphenethyl-amine	ND	ug/kg	10000
2,4-Dimethylphenol	27000	ug/kg	10000
Dimethyl phthalate	ND	ug/kg	10000
1,3-Dinitrobenzene	ND	ug/kg	10000
4,6-Dinitro-o-cresol	ND	ug/kg	50000
2,4-Dinitrophenol	ND	ug/kg	50000
2,4-Dinitrotoluene	ND	ug/kg	10000
2,6-Dinitrotoluene	ND	ug/kg	10000
Di-n-octyl phthalate	ND	ug/kg	10000
Diphenylamine	ND	ug/kg	10000
Ethyl methanesulfonate	ND	ug/kg	10000
Fluoranthene	ND	ug/kg	10000
Fluorene	13000	ug/kg	10000
Hexachlorobenzene	ND	ug/kg	10000
Hexachlorobutadiene	ND	ug/kg	10000
Hexachlorocyclopentadiene	ND	ug/kg	10000
Hexachloroethane	ND	ug/kg	10000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10000
Isophorone	ND	ug/kg	10000
3-Methylcholanthrene	ND	ug/kg	10000
Methyl methanesulfonate	ND	ug/kg	10000
2-Methylnaphthalene	290000	ug/kg	10000
Naphthalene	54000	ug/kg	10000
1-Naphthylamine	ND	ug/kg	10000
2-Naphthylamine	ND	ug/kg	10000
2-Nitroaniline	ND	ug/kg	50000
3-Nitroaniline	ND	ug/kg	50000
4-Nitroaniline	ND	ug/kg	50000
Nitrobenzene	ND	ug/kg	10000
2-Nitrophenol	ND	ug/kg	10000
4-Nitrophenol	ND	ug/kg	50000
N-Nitroso-di-n-butylamine	ND	ug/kg	10000
N-Nitrosodimethylamine	ND	ug/kg	10000
N-Nitrosodiphenylamine	ND	ug/kg	10000
N-Nitroso-di-n-propylamine	ND	ug/kg	10000
N-Nitrosopiperidine	ND	ug/kg	10000
Pentachlorobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1004V6.0
Lab ID: 010192-0001-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081323
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	50000
Pentachlorophenol	ND	ug/kg	50000
Phenacetin	ND	ug/kg	10000
Phenanthrene	23000	ug/kg	10000
Phenol	ND	ug/kg	10000
2-Picoline	ND	ug/kg	10000
Pronamide	ND	ug/kg	10000
Pyrene	ND	ug/kg	10000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	10000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	50000
1,2,4-Trichlorobenzene	ND	ug/kg	10000
2,4,5-Trichlorophenol	ND	ug/kg	50000
2,4,6-Trichlorophenol	ND	ug/kg	10000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	10000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	88	%	--
2-Fluorobiphenyl	94	%	--
Terphenyl-d14	86	%	--
Phenol-d5	85	%	--
2-Fluorophenol	81	%	--
2,4,6-Tribromophenol	83	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V9.0
 Lab ID: 010192-0002-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081324
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1004V9.0
Lab ID: 010192-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081324
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V9.0
 Lab ID: 010192-0002-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081324
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	104	%	--
2-Fluorobiphenyl	102	%	--
Terphenyl-d14	107	%	--
Phenol-d5	95	%	--
2-Fluorophenol	91	%	--
2,4,6-Tribromophenol	79	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RF11004V12.5
 Lab ID: 010192-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081325
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1004V12.5
Lab ID: 010192-0003-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081325
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	5000	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1004V12.5
 Lab ID: 010192-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081325
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 29 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	105	%	--
2-Fluorobiphenyl	107	%	--
Terphenyl-d14	109	%	--
Phenol-d5	103	%	--
2-Fluorophenol	101	%	--
2,4,6-Tribromophenol	88	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V0.0
 Lab ID: 010192-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081326
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V0.0
 Lab ID: 010192-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081326
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11005V0.0
 Lab ID: 010192-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081326
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro-benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	87	%	--
2-Fluorobiphenyl	90	%	--
Terphenyl-d14	99	%	--
Phenol-d5	84	%	--
2-Fluorophenol	81	%	--
2,4,6-Tribromophenol	71	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V3.0
 Lab ID: 010192-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081327
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francisc

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1005V3.0
Lab ID: 010192-0005-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081327
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11005V3.0
 Lab ID: 010192-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081327
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	96	%	--
2-Fluorobiphenyl	99	%	--
Terphenyl-d14	97	%	--
Phenol-d5	81	%	--
2-Fluorophenol	84	%	--
2,4,6-Tribromophenol	86	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V6.0
 Lab ID: 010192-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081328
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	100000
Acenaphthylene	ND	ug/kg	100000
Acetophenone	ND	ug/kg	100000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	100000
Anthracene	ND	ug/kg	100000
Benzo(a)anthracene	ND	ug/kg	100000
Benzo(b)fluoranthene	ND	ug/kg	100000
Benzo(k)fluoranthene	ND	ug/kg	100000
Benzo(g,h,i)perylene	ND	ug/kg	100000
Benzo(a)pyrene	ND	ug/kg	100000
Benzyl alcohol	ND	ug/kg	100000
bis(2-Chloroethoxy)-methane	ND	ug/kg	100000
bis(2-Chloroethyl) ether	ND	ug/kg	100000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	100000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	100000
4-Bromophenyl phenyl ether	ND	ug/kg	100000
Butyl benzyl phthalate	ND	ug/kg	100000
4-Chloroaniline	ND	ug/kg	100000
4-Chloro-3-methylphenol	ND	ug/kg	100000
2-Chloronaphthalene	ND	ug/kg	100000
2-Chlorophenol	ND	ug/kg	100000
4-Chlorophenyl phenyl ether	ND	ug/kg	100000
o-Cresol	ND	ug/kg	100000
m & p-Cresol(s)	120000	ug/kg	100000
Chrysene	ND	ug/kg	100000
Dibenz(a,h)anthracene	ND	ug/kg	100000
Di-n-butyl phthalate	ND	ug/kg	100000
1,2-Dichlorobenzene	ND	ug/kg	100000
1,3-Dichlorobenzene	ND	ug/kg	100000
1,4-Dichlorobenzene	ND	ug/kg	100000
3,3'-Dichlorobenzidine	ND	ug/kg	200000
2,4-Dichlorophenol	ND	ug/kg	100000
2,6-Dichlorophenol	ND	ug/kg	100000
Diethyl phthalate	ND	ug/kg	100000
p-Dimethylaminoazobenzene	ND	ug/kg	100000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11005V6.0
 Lab ID: 010192-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081328
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	100000
a,a-Dimethylphenethyl-amine	ND	ug/kg	100000
2,4-Dimethylphenol	ND	ug/kg	100000
Dimethyl phthalate	ND	ug/kg	100000
1,3-Dinitrobenzene	ND	ug/kg	100000
4,6-Dinitro-o-cresol	ND	ug/kg	500000
2,4-Dinitrophenol	ND	ug/kg	500000
2,4-Dinitrotoluene	ND	ug/kg	100000
2,6-Dinitrotoluene	ND	ug/kg	100000
Di-n-octyl phthalate	ND	ug/kg	100000
Diphenylamine	ND	ug/kg	100000
Ethyl methanesulfonate	ND	ug/kg	100000
Fluoranthene	ND	ug/kg	100000
Fluorene	100000	ug/kg	100000
Hexachlorobenzene	ND	ug/kg	100000
Hexachlorobutadiene	ND	ug/kg	100000
Hexachlorocyclopentadiene	ND	ug/kg	100000
Hexachloroethane	ND	ug/kg	100000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	100000
Isophorone	ND	ug/kg	100000
3-Methylcholanthrene	ND	ug/kg	100000
Methyl methanesulfonate	ND	ug/kg	100000
2-Methylnaphthalene	1400000	ug/kg	100000
Naphthalene	340000	ug/kg	100000
1-Naphthylamine	ND	ug/kg	100000
2-Naphthylamine	ND	ug/kg	100000
2-Nitroaniline	ND	ug/kg	500000
3-Nitroaniline	ND	ug/kg	500000
4-Nitroaniline	ND	ug/kg	500000
Nitrobenzene	ND	ug/kg	100000
2-Nitrophenol	ND	ug/kg	100000
4-Nitrophenol	ND	ug/kg	500000
N-Nitroso-di-n-butylamine	ND	ug/kg	100000
N-Nitrosodimethylamine	ND	ug/kg	100000
N-Nitrosodiphenylamine	ND	ug/kg	100000
N-Nitroso-di-n-propylamine	ND	ug/kg	100000
N-Nitrosopiperidine	ND	ug/kg	100000
Pentachlorobenzene	ND	ug/kg	100000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V6.0
 Lab ID: 010192-0006-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081328
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	500000
Pentachlorophenol	ND	ug/kg	500000
Phenacetin	ND	ug/kg	100000
Phenanthrene	250000	ug/kg	100000
Phenol	ND	ug/kg	100000
2-Picoline	ND	ug/kg	100000
Pronamide	ND	ug/kg	100000
Pyrene	ND	ug/kg	100000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	100000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	500000
1,2,4-Trichlorobenzene	ND	ug/kg	100000
2,4,5-Trichlorophenol	ND	ug/kg	500000
2,4,6-Trichlorophenol	ND	ug/kg	100000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	100000
1,2-Diphenylhydrazine	ND	ug/kg	100000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	ND	%	--
2-Fluorobiphenyl	ND	%	--
Terphenyl-d14	ND	%	--
Phenol-d5	ND	%	--
2-Fluorophenol	ND	%	--
2,4,6-Tribromophenol	ND	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V9.0
 Lab ID: 010192-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081329
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	34000	ug/kg	5000
m & p-Cresol(s)	68000	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RF11005V9.0
Lab ID: 010192-0007-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081329
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	12000	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V9.0
 Lab ID: 010192-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081329
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	71000	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	92	%	--
2-Fluorobiphenyl	97	%	--
Terphenyl-d14	100	%	--
Phenol-d5	94	%	--
2-Fluorophenol	90	%	--
2,4,6-Tribromophenol	88	%	--

ND = Not detected
 NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005V12.5
 Lab ID: 010192-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081330
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	19000	ug/kg	5000
m & p-Cresol(s)	34000	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Name: Giant Refining
 ID: RFI1005V12.5
 ID: 010192-0008-SA
 Matrix: SOIL
 Analyzed: 29 JUN 90

Enseco ID: 1081330
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
1,2-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
1-Methylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	7900	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
1-Nitrobenzene	ND	ug/kg	5000
1-Nitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
1-Nitrotoluene	ND	ug/kg	5000
2-Nitrotoluene	ND	ug/kg	5000
n-Octyl phthalate	ND	ug/kg	5000
Benzylamine	ND	ug/kg	5000
Methanesulfonate	ND	ug/kg	5000
Anthene	ND	ug/kg	5000
orene	ND	ug/kg	5000
achlorobenzene	ND	ug/kg	5000
chlorobutadiene	ND	ug/kg	5000
chlorocyclopentadiene	ND	ug/kg	5000
achloroethane	ND	ug/kg	5000
1,2,3-cd)pyrene	ND	ug/kg	5000
orone	ND	ug/kg	5000
ethylcholanthrene	ND	ug/kg	5000
ethyl methanesulfonate	ND	ug/kg	5000
nylnaphthalene	ND	ug/kg	5000
alene	ND	ug/kg	5000
aphthylamine	ND	ug/kg	5000
aphthylamine	ND	ug/kg	5000
roaniline	ND	ug/kg	25000
roaniline	ND	ug/kg	25000
itroaniline	ND	ug/kg	25000
benzene	ND	ug/kg	5000
rophenol	ND	ug/kg	5000
itrophenol	ND	ug/kg	25000
itroso-di-n-butylamine	ND	ug/kg	5000
rosodimethylamine	ND	ug/kg	5000
rosodiphenylamine	ND	ug/kg	5000
itroso-di-			
n-propylamine	ND	ug/kg	5000
rosopiperidine	ND	ug/kg	5000
achlorobenzene	ND	ug/kg	5000

(continued on following page)

Not detected
 = Not applicable

Prepared By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1005V12.5
Lab ID: 010192-0008-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081330
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	32000	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	82	%	--
2-Fluorobiphenyl	88	%	--
Terphenyl-d14	87	%	--
Phenol-d5	84	%	--
2-Fluorophenol	86	%	--
2,4,6-Tribromophenol	75	%	--

ND = Not detected
NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI100503.0
 Lab ID: 010192-0009-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081331
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF1100503.0
 Lab ID: 010192-0009-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081331
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI100503.0
Lab ID: 010192-0009-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081331
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 30 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	80	%	--
2-Fluorobiphenyl	81	%	--
Terphenyl-d14	85	%	--
Phenol-d5	75	%	--
2-Fluorophenol	78	%	--
2,4,6-Tribromophenol	71	%	--

ND = Not detected
NA = Not applicable

Reported By: Donna Reinwald

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1002V0.0
 Lab ID: 010192-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081332
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V0.0
Lab ID: 010192-0010-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081332
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V0.0
Lab ID: 010192-0010-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081332
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	78	%	--
2-Fluorobiphenyl	84	%	--
Terphenyl-d14	88	%	--
Phenol-d5	75	%	--
2-Fluorophenol	77	%	--
2,4,6-Tribromophenol	84	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francisc

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1002V3.0
 Lab ID: 010192-0011-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081333
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	10000
Acenaphthylene	ND	ug/kg	10000
Acetophenone	ND	ug/kg	10000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	10000
Anthracene	ND	ug/kg	10000
Benzo(a)anthracene	ND	ug/kg	10000
Benzo(b)fluoranthene	ND	ug/kg	10000
Benzo(k)fluoranthene	ND	ug/kg	10000
Benzo(g,h,i)perylene	ND	ug/kg	10000
Benzo(a)pyrene	ND	ug/kg	10000
Benzyl alcohol	ND	ug/kg	10000
bis(2-Chloroethoxy)-methane	ND	ug/kg	10000
bis(2-Chloroethyl) ether	ND	ug/kg	10000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	10000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	10000
4-Bromophenyl phenyl ether	ND	ug/kg	10000
Butyl benzyl phthalate	ND	ug/kg	10000
4-Chloroaniline	ND	ug/kg	10000
4-Chloro-3-methylphenol	ND	ug/kg	10000
2-Chloronaphthalene	ND	ug/kg	10000
2-Chlorophenol	ND	ug/kg	10000
4-Chlorophenyl phenyl ether	ND	ug/kg	10000
o-Cresol	ND	ug/kg	10000
m & p-Cresol(s)	ND	ug/kg	10000
Chrysene	ND	ug/kg	10000
Dibenz(a,h)anthracene	ND	ug/kg	10000
Di-n-butyl phthalate	ND	ug/kg	10000
1,2-Dichlorobenzene	ND	ug/kg	10000
1,3-Dichlorobenzene	ND	ug/kg	10000
1,4-Dichlorobenzene	ND	ug/kg	10000
3,3'-Dichlorobenzidine	ND	ug/kg	20000
2,4-Dichlorophenol	ND	ug/kg	10000
2,6-Dichlorophenol	ND	ug/kg	10000
Diethyl phthalate	ND	ug/kg	10000
p-Dimethylaminoazobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RF11002V3.0
Lab ID: 010192-0011-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081333
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	10000
a,a-Dimethylphenethyl-amine	ND	ug/kg	10000
2,4-Dimethylphenol	ND	ug/kg	10000
Dimethyl phthalate	ND	ug/kg	10000
1,3-Dinitrobenzene	ND	ug/kg	10000
4,6-Dinitro-o-cresol	ND	ug/kg	50000
2,4-Dinitrophenol	ND	ug/kg	50000
2,4-Dinitrotoluene	ND	ug/kg	10000
2,6-Dinitrotoluene	ND	ug/kg	10000
Di-n-octyl phthalate	ND	ug/kg	10000
Diphenylamine	ND	ug/kg	10000
Ethyl methanesulfonate	ND	ug/kg	10000
Fluoranthene	ND	ug/kg	10000
Fluorene	ND	ug/kg	10000
Hexachlorobenzene	ND	ug/kg	10000
Hexachlorobutadiene	ND	ug/kg	10000
Hexachlorocyclopentadiene	ND	ug/kg	10000
Hexachloroethane	ND	ug/kg	10000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10000
Isophorone	ND	ug/kg	10000
3-Methylcholanthrene	ND	ug/kg	10000
Methyl methanesulfonate	ND	ug/kg	10000
2-Methylnaphthalene	56000	ug/kg	10000
Naphthalene	ND	ug/kg	10000
1-Naphthylamine	ND	ug/kg	10000
2-Naphthylamine	ND	ug/kg	10000
2-Nitroaniline	ND	ug/kg	50000
3-Nitroaniline	ND	ug/kg	50000
4-Nitroaniline	ND	ug/kg	50000
Nitrobenzene	ND	ug/kg	10000
2-Nitrophenol	ND	ug/kg	10000
4-Nitrophenol	ND	ug/kg	50000
N-Nitroso-di-n-butylamine	ND	ug/kg	10000
N-Nitrosodimethylamine	ND	ug/kg	10000
N-Nitrosodiphenylamine	ND	ug/kg	10000
N-Nitroso-di-n-propylamine	ND	ug/kg	10000
N-Nitrosopiperidine	ND	ug/kg	10000
Pentachlorobenzene	ND	ug/kg	10000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V3.0
Lab ID: 010192-0011-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081333
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	50000
Pentachlorophenol	ND	ug/kg	50000
Phenacetin	ND	ug/kg	10000
Phenanthrene	28000	ug/kg	10000
Phenol	ND	ug/kg	10000
2-Picoline	ND	ug/kg	10000
Pronamide	ND	ug/kg	10000
Pyrene	ND	ug/kg	10000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	10000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	50000
1,2,4-Trichlorobenzene	ND	ug/kg	10000
2,4,5-Trichlorophenol	ND	ug/kg	50000
2,4,6-Trichlorophenol	ND	ug/kg	10000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	10000
1,2-Diphenylhydrazine	ND	ug/kg	10000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	70	%	--
2-Fluorobiphenyl	82	%	--
Terphenyl-d14	84	%	--
Phenol-d5	70	%	--
2-Fluorophenol	69	%	--
2,4,6-Tribromophenol	81	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V6.0
Lab ID: 010192-0012-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081334
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V6.0
Lab ID: 010192-0012-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081334
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francisc

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V6.0
Lab ID: 010192-0012-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081334
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	79	%	--
2-Fluorobiphenyl	84	%	--
Terphenyl-d14	90	%	--
Phenol-d5	75	%	--
2-Fluorophenol	74	%	--
2,4,6-Tribromophenol	66	%	--

ND = Not detected
NA = Not applicable

Reported By: Scott Francic

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics.

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V9.0
Lab ID: 010192-0013-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081336
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002V9.0
Lab ID: 010192-0013-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081336
Sampled: 28 JUN 90
Prepared: 08 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RF11002V9.0
 Lab ID: 010192-0013-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081336
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	93	%	--
2-Fluorobiphenyl	96	%	--
Terphenyl-d14	104	%	--
Phenol-d5	87	%	--
2-Fluorophenol	85	%	--
2,4,6-Tribromophenol	74	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RF11002V12.5
 Lab ID: 010192-0014-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081337
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1002V12.5
 Lab ID: 010192-0014-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081337
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Frencis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1002V12.5
 Lab ID: 010192-0014-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081337
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	66	%	--
2-Fluorobiphenyl	67	%	--
Terphenyl-d14	74	%	--
Phenol-d5	58	%	--
2-Fluorophenol	61	%	--
2,4,6-Tribromophenol	50	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005D12.5
 Lab ID: 010192-0015-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081339
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	16000	ug/kg	5000
m & p-Cresol(s)	28000	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1005D12.5
 Lab ID: 010192-0015-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081339
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethyl-amine	ND	ug/kg	5000
2,4-Dimethylphenol	5300	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

(continued on following page)

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFII005012.5
 Lab ID: 010192-0015-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081339
 Sampled: 28 JUN 90
 Prepared: 08 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	28000	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--
Nitrobenzene-d5	80	%	--
2-Fluorobiphenyl	81	%	--
Terphenyl-d14	86	%	--
Phenol-d5	74	%	--
2-Fluorophenol	75	%	--
2,4,6-Tribromophenol	58	%	--

ND = Not detected
 NA = Not applicable

Reported By: Scott Francis

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics

Method 8270

Client Name: Giant Refining
Client ID: RFI1002E3.0
Lab ID: 010192-0016-SA
Matrix: AQUEOUS
Authorized: 29 JUN 90

Enseco ID: 1081342
Sampled: 28 JUN 90
Prepared: 03 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acetophenone	ND	ug/L	10
4-Aminobiphenyl	ND	ug/L	10
Aniline	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzyl alcohol	ND	ug/L	20
bis(2-Chloroethoxy)-methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
bis(2-Chloroisopropyl)-ether	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl phenyl ether	ND	ug/L	10
o-Cresol	ND	ug/L	10
m & p-Cresol(s)	ND	ug/L	10
Chrysene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
2,6-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Angie Poturalski

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
Client ID: RFI1002E3.0
Lab ID: 010192-0016-SA
Matrix: AQUEOUS
Authorized: 29 JUN 90

Enseco ID: 1081342
Sampled: 28 JUN 90
Prepared: 03 JUL 90

Received: 29 JUN 90
Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
7,12-Dimethylbenz(a)-anthracene	ND	ug/L	10
a,a-Dimethylphenethylamine	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
1,3-Dinitrobenzene	ND	ug/L	10
4,6-Dinitro-o-cresol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Diphenylamine	ND	ug/L	10
Ethyl methanesulfonate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
3-Methylcholanthrene	ND	ug/L	20
Methyl methanesulfonate	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
Naphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	10
2-Naphthylamine	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	10
N-Nitrosodimethylamine	ND	ug/L	10
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
N-Nitrosopiperidine	ND	ug/L	10
Pentachlorobenzene	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Angie Poturalski

Approved By: Jeff Lowry

Appendix IX Semivolatile Organics (CONT.)

Method 8270

Client Name: Giant Refining
 Client ID: RFI1002E3.0
 Lab ID: 010192-0016-SA
 Matrix: AQUEOUS
 Authorized: 29 JUN 90

Enseco ID: 1081342
 Sampled: 28 JUN 90
 Prepared: 03 JUL 90

Received: 29 JUN 90
 Analyzed: 31 JUL 90

Parameter	Result	Units	Reporting Limit
Pentachloronitrobenzene	ND	ug/L	50
Pentachlorophenol	ND	ug/L	50
Phenacetin	ND	ug/L	10
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
2-Picoline	ND	ug/L	10
Pronamide	ND	ug/L	20
Pyrene	ND	ug/L	10
1,2,4,5-Tetrachloro- benzene	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	20
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10
Benzidine	ND	ug/L	--
Benzoic acid	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	--
1,2-Diphenylhydrazine	ND	ug/L	50
Nitrobenzene-d5	65	%	--
2-Fluorobiphenyl	65	%	--
Terphenyl-d14	79	%	--
Phenol-d5	54	%	--
2-Fluorophenol	50	%	--
2,4,6-Tribromophenol	56	%	--

ND = Not detected
 NA = Not applicable

Reported By: Angie Poturalski

Approved By: Jeff Lowry

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1004V6.0
 Lab ID: 010192-0001-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081323
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	2.4	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	422	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.80	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	398	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.8	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	29.0	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	50.0	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	1.3	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	9.0	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	2320	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	18.6	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	81.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1004V9.0
Lab ID: 010192-0002-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081324
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.56	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	213	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	21.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	3.8	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	6.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	12.5	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	7.9	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1200	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	13.9	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	12.5	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1004V12.5
 Lab ID: 010192-0003-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081325
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	1.0	7060	27 JUL 90	30 JUL 90
Barium	164	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	7.2	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	6.9	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	13.3	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	8.0	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1210	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	13.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	12.5	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1005V0.0
 Lab ID: 010192-0004-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081326
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	1.0	7060	27 JUL 90	30 JUL 90
Barium	315	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.88	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.8	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	9.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	13.2	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	5.8	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	850	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	14.5	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	11.8	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1005V3.0
 Lab ID: 010192-0005-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081327
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.52	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	321	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.85	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.3	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	4.6	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	11.8	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	6.8	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	834	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	14.1	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	13.1	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1005V6.0
Lab ID: 010192-0006-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081328
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	27.9	mg/kg	5.0	7060	27 JUL 90	30 JUL 90
Barium	700	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.76	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	1.5	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	4020	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	8.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	215	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	337	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	2.9	mg/kg	0.69	7471	20 JUL 90	24 JUL 90
Nickel	19.2	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	3920	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	5.0	7740	20 JUL 90	26 JUL 90
Vanadium	24.2	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	538	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1005V9.0
 Lab ID: 010192-0007-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081329
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.58	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	48.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.4	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	11.6	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	5.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	11.8	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	16.1	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	11.3	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1450	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	18.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	17.9	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1005V12.5
 Lab ID: 010192-0008-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081330
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	1.0	7060	27 JUL 90	30 JUL 90
Barium	187	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.2	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	8.9	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	5.1	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	7.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	14.2	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	9.3	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1250	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	16.2	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	14.3	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1002V0.0
 Lab ID: 010192-0010-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081332
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.52	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	188	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.0	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	7.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.3	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	6.4	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	13.8	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	6.4	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	806	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	15.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	13.4	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
 Client ID: RFI1002V3.0
 Lab ID: 010192-0011-SA
 Matrix: SOIL
 Authorized: 29 JUN 90

Enseco ID: 1081333
 Sampled: 28 JUN 90
 Prepared: See Below

Received: 29 JUN 90
 Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.79	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	231	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.90	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	117	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	4.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	16.5	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	19.3	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	9.2	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1310	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	18.2	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	228	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
 NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1002V6.0
Lab ID: 010192-0012-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081334
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	0.58	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	332	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.90	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.7	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	3.9	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	5.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	13.5	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	6.5	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	841	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	18.8	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	11.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1002V9.0
Lab ID: 010192-0013-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081336
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	1.0	7060	27 JUL 90	30 JUL 90
Barium	201	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.4	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	8.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	6.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	7.7	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	14.9	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	9.5	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1380	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	16.5	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	15.2	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1002V12.5
Lab ID: 010192-0014-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081337
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	171	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	0.87	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	5.4	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	7.7	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	11.9	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	8.5	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1410	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	18.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	15.0	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1005D12.5
Lab ID: 010192-0015-SA
Matrix: SOIL
Authorized: 29 JUN 90

Enseco ID: 1081339
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Wet wt. Reporting Units	Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/kg	6.0	6010	27 JUL 90	30 JUL 90
Arsenic	ND	mg/kg	0.50	7060	27 JUL 90	30 JUL 90
Barium	124	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Beryllium	1.1	mg/kg	0.20	6010	27 JUL 90	30 JUL 90
Cadmium	ND	mg/kg	0.50	6010	27 JUL 90	30 JUL 90
Chromium	6.1	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Cobalt	3.9	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Copper	7.8	mg/kg	2.0	6010	27 JUL 90	30 JUL 90
Lead	16.0	mg/kg	5.0	6010	27 JUL 90	30 JUL 90
Mercury	ND	mg/kg	0.10	7471	18 JUL 90	19 JUL 90
Nickel	6.9	mg/kg	4.0	6010	27 JUL 90	30 JUL 90
Potassium	1010	mg/kg	500	6010	27 JUL 90	30 JUL 90
Selenium	ND	mg/kg	1.0	7740	20 JUL 90	26 JUL 90
Vanadium	14.0	mg/kg	1.0	6010	27 JUL 90	30 JUL 90
Zinc	12.4	mg/kg	2.0	6010	27 JUL 90	30 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Dave Roberts

Approved By: Dave Roberts

Metals

Total Metals

Client Name: Giant Refining
Client ID: RFI1002E3.0
Lab ID: 010192-0016-SA
Matrix: AQUEOUS
Authorized: 29 JUN 90

Enseco ID: 1081342
Sampled: 28 JUN 90
Prepared: See Below

Received: 29 JUN 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Antimony	ND	mg/L	0.060	6010	16 JUL 90	17 JUL 90
Arsenic	ND	mg/L	0.0050	7060	16 JUL 90	19 JUL 90
Barium	ND	mg/L	0.010	6010	16 JUL 90	17 JUL 90
Beryllium	ND	mg/L	0.0020	6010	16 JUL 90	17 JUL 90
Cadmium	ND	mg/L	0.0055	6010	16 JUL 90	17 JUL 90
Chromium	ND	mg/L	0.010	6010	16 JUL 90	17 JUL 90
Cobalt	ND	mg/L	0.010	6010	16 JUL 90	17 JUL 90
Copper	ND	mg/L	0.020	6010	16 JUL 90	17 JUL 90
Lead	ND	mg/L	0.0050	7421	16 JUL 90	19 JUL 90
Mercury	ND	mg/L	0.00020	7470	17 JUL 90	18 JUL 90
Nickel	ND	mg/L	0.040	6010	16 JUL 90	17 JUL 90
Potassium	ND	mg/L	5.0	6010	16 JUL 90	17 JUL 90
Selenium	ND	mg/L	0.0050	7740	16 JUL 90	18 JUL 90
Vanadium	ND	mg/L	0.010	6010	16 JUL 90	17 JUL 90
Zinc	ND	mg/L	0.020	6010	16 JUL 90	17 JUL 90

ND = Not detected
NA = Not applicable

Reported By: Sandra Jones

Approved By: Mary Grehl

Quality Control Results

The Enseco laboratories operate under a vigorous QA/QC program designed to ensure the generation of scientifically valid, legally defensible data by monitoring every aspect of laboratory operations. Routine QA/QC procedures include the use of approved methodologies, independent verification of analytical standards, use of duplicate Laboratory Control Samples to assess the precision and accuracy of the methodology on a routine basis, and a rigorous system of data review.

In addition, the Enseco laboratories maintain a comprehensive set of certifications from both state and federal governmental agencies which require frequent analyses of blind audit samples. Enseco - Rocky Mountain Analytical Laboratory is certified by the EPA under the EPA/CLP program for both Organic and Inorganic analyses, under the USATHAMA (U.S. Army) program, by the Army Corps of Engineers, and the states of Colorado, New Jersey, New York, Utah, and Florida, among others.

The standard laboratory QC package is designed to:

- 1) establish a strong, cost-effective QC program that ensures the generation of scientifically valid, legally defensible data
- 2) assess the laboratory's performance of the analytical method using control limits generated with a well-defined matrix
- 3) establish clear-cut guidelines for acceptability of analytical data so that QC decisions can be made immediately at the bench, and
- 4) provide a standard set of reportables which assures the client of the quality of his data.

The Enseco QC program is based upon monitoring the precision and accuracy of an analytical method by analyzing a set of Duplicate Control Samples (DCS) at frequent, well-defined intervals. Each DCS is a well-characterized matrix which is spiked with target compounds at 5-100 times the reporting limit, depending upon the methodology being monitored. The purpose of the DCS is not to duplicate the sample matrix, but rather to provide an interference-free, homogeneous matrix from which to gather data to establish control limits. These limits are used to determine whether data generated by the laboratory on any given day is in control.

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery ± 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference $+ 3$ standard deviation units. These control limits are fairly narrow based on the consistency of the matrix being monitored and are updated on a quarterly basis.

For each batch of samples analyzed, an additional control measure is taken in the form of a Single Control Sample (SCS). The SCS consists of a control matrix that is spiked with either representative target compounds or surrogate compounds appropriate to the method being used. An SCS is prepared for each sample lot for which the DCS pair are not analyzed.

Accuracy for DCS and SCS is measured by Percent Recovery.

$$\% \text{ Recovery} = \frac{\text{Measured Concentration}}{\text{Actual Concentration}} \times 100$$

Precision for DCS is measured by Relative Percent Difference (RPD).

$$\text{RPD} = \frac{|\text{Measured Concentration DCS1} - \text{Measured Concentration DCS2}|}{(\text{Measured Concentration DCS1} + \text{Measured Concentration DCS2})/2} \times 100$$

All samples analyzed concurrently by the same test are assigned the same QC lot number. Projects which contain numerous samples, analyzed over several days, may have multiple QC lot numbers associated with each test. The QC information which follows includes a listing of the QC lot numbers associated with each of the samples reported, DCS and SCS (where applicable) recoveries from the QC lots associated with the samples, and control limits for these lots. The QC data is reported by test code, in the order that the tests are reported in the analytical results section of this report.

QC LOT ASSIGNMENT REPORT Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010192-0001-SA	SOIL	8240-S	10 JUL 90-H	11 JUL 90-H
010192-0002-SA	SOIL	8240-S	10 JUL 90-H	11 JUL 90-H
010192-0003-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0004-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0005-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0006-SA	SOIL	8240-S	10 JUL 90-H	11 JUL 90-H
010192-0007-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0008-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0009-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0010-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0011-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0012-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0013-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0014-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0015-SA	SOIL	8240-S	09 JUL 90-L	08 JUL 90-L
010192-0016-SA	AQUEOUS	624-A	08 JUL 90-L	08 JUL 90-L
010192-0017-SA	AQUEOUS	624-A	08 JUL 90-L	10 JUL 90-L

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Spiked	Concentration		AVG	Accuracy		Precision	
		DCS1	Measured DCS2		DCS	Average(%) Limits	(RPD) DCS Limit	

Category: 8240-S
Matrix: SOIL
QC Lot: 10 JUL 90-H
Concentration Units: ug/kg

1,1-Dichloroethene	5000	4940	5230	5080	102	59-172	5.7	22
Trichloroethene	5000	5100	5290	5200	104	62-137	3.7	24
Benzene	5000	5250	5340	5300	106	66-142	1.7	21
Toluene	5000	5030	5430	5230	105	59-139	7.6	21
Chlorobenzene	5000	5050	5320	5180	104	60-133	5.2	21

Category: 8240-S
Matrix: SOIL
QC Lot: 09 JUL 90-L
Concentration Units: ug/kg

1,1-Dichloroethene	5000	4400	4010	4200	84	59-172	9.3	22
Trichloroethene	5000	5410	5510	5460	109	62-137	1.8	24
Benzene	5000	5610	5540	5580	112	66-142	1.3	21
Toluene	5000	5200	4930	5060	101	59-139	5.3	21
Chlorobenzene	5000	5430	5020	5220	105	60-133	7.8	21

Category: 624-A
Matrix: AQUEOUS
QC Lot: 08 JUL 90-L
Concentration Units: ug/L

1,1-Dichloroethene	50	42.1	43.6	42.8	86	61-145	3.5	14
Trichloroethene	50	51.5	51.6	51.6	103	71-120	0.2	14
Benzene	50	52.8	52.4	52.6	105	76-127	0.8	11
Toluene	50	51.4	51.9	51.6	103	76-125	1.0	13
Chlorobenzene	50	51.7	51.3	51.5	103	75-130	0.8	13

Calculations are performed before rounding to avoid round-off errors in calculated results.

SINGLE CONTROL SAMPLE REPORT
Volatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8240-S

Matrix: SOIL

QC Lot: 10 JUL 90-H QC Run: 11 JUL 90-H

Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	5230	105	70-121
4-Bromofluorobenzene	5000	5100	102	74-121
Toluene-d8	5000	4900	98	81-117

Category: 8240-S

Matrix: SOIL

QC Lot: 09 JUL 90-L QC Run: 08 JUL 90-L

Concentration Units: ug/kg

1,2-Dichloroethane-d4	5000	4900	98	70-121
4-Bromofluorobenzene	5000	5170	103	74-121
Toluene-d8	5000	4940	99	81-117

Category: 624-A

Matrix: AQUEOUS

QC Lot: 08 JUL 90-L QC Run: 08 JUL 90-L

Concentration Units: ug/L

1,2-Dichloroethane-d4	50.0	49.0	98	76-114
4-Bromofluorobenzene	50.0	51.7	103	86-115
Toluene-d8	50.0	49.4	99	88-110

Category: 624-A

Matrix: AQUEOUS

QC Lot: 08 JUL 90-L QC Run: 10 JUL 90-L

Concentration Units: ug/L

1,2-Dichloroethane-d4	50.0	47.6	95	76-114
4-Bromofluorobenzene	50.0	46.7	93	86-115
Toluene-d8	50.0	49.0	98	88-110

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Volatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 10 JUL 90-H QC Run: 11 JUL 90-H			
Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene			
(cis/trans)	ND	ug/kg	500
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-			
2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone			
(MIBK)	ND	ug/kg	1000

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 10 JUL 90-H QC Run: 11 JUL 90-H			
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000

Test: 8240-PP-S
 Matrix: SOIL
 QC Lot: 09 JUL 90-L QC Run: 08 JUL 90-L

Chloromethane	ND	ug/kg	1000
Bromomethane	ND	ug/kg	1000
Vinyl chloride	ND	ug/kg	1000
Chloroethane	ND	ug/kg	1000
Methylene chloride	ND	ug/kg	500
1,1-Dichloroethene	ND	ug/kg	500
1,1-Dichloroethane	ND	ug/kg	500
1,2-Dichloroethene	ND	ug/kg	500
(cis/trans)			
Chloroform	ND	ug/kg	500
1,2-Dichloroethane	ND	ug/kg	500
1,1,1-Trichloroethane	ND	ug/kg	500
Carbon tetrachloride	ND	ug/kg	500
Bromodichloromethane	ND	ug/kg	500
1,2-Dichloropropane	ND	ug/kg	500
trans-1,3-Dichloropropene	ND	ug/kg	500
Trichloroethene	ND	ug/kg	500
Dibromochloromethane	ND	ug/kg	500
1,1,2-Trichloroethane	ND	ug/kg	500
Benzene	ND	ug/kg	500
cis-1,3-Dichloropropene	ND	ug/kg	500
2-Chloroethyl vinyl ether	ND	ug/kg	1000
Bromoform	ND	ug/kg	500
1,1,2,2-Tetrachloroethane	ND	ug/kg	500
Tetrachloroethene	ND	ug/kg	500
Toluene	ND	ug/kg	500
Chlorobenzene	ND	ug/kg	500
Ethylbenzene	ND	ug/kg	500

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8240-PP-S			
Matrix: SOIL			
QC Lot: 09 JUL 90-L QC Run: 08 JUL 90-L			
Acetone	ND	ug/kg	5000
Carbon disulfide	ND	ug/kg	500
Acrolein	ND	ug/kg	10000
Acrylonitrile	ND	ug/kg	10000
Dibromomethane	ND	ug/kg	500
trans-1,4-Dichloro-2-butene	ND	ug/kg	500
Dichlorodifluoromethane	ND	ug/kg	2000
trans-1,2-Dichloroethene	ND	ug/kg	500
Ethanol	ND	ug/kg	10000
Iodomethane	ND	ug/kg	500
2-Butanone	ND	ug/kg	5000
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	1000
Styrene	ND	ug/kg	500
Trichlorofluoromethane	ND	ug/kg	500
1,2,3-Trichloropropane	ND	ug/kg	500
Vinyl acetate	ND	ug/kg	1000
Xylenes (total)	ND	ug/kg	500
2-Hexanone	ND	ug/kg	1000
Ethyl methacrylate	ND	ug/kg	1000

Test: 624-PP-AP
Matrix: AQUEOUS
QC Lot: 08 JUL 90-L QC Run: 08 JUL 90-L

Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 624-PP-AP			
Matrix: AQUEOUS			
QC Lot: 08 JUL 90-L QC Run: 08 JUL 90-L			
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Acetone	ND	ug/L	10
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Carbon disulfide	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	10
trans-1,2-Dichloroethene	ND	ug/L	5.0
Ethanol	ND	ug/L	100
Iodomethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	50
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10
Styrene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	500
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
2-Hexanone	ND	ug/L	10
Ethyl methacrylate	ND	ug/L	10

METHOD BLANK REPORT
Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 624-PP-AP			
Matrix: AQUEOUS			
QC Lot: 08 JUL 90-L QC Run: 10 JUL 90-L			
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene			
(cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Acetone	ND	ug/L	50
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	100
Carbon disulfide	ND	ug/L	5.0
Dibromomethane	ND	ug/L	5.0
trans-1,4-Dichloro-			
2-butene	ND	ug/L	5.0
Dichlorodifluoromethane	ND	ug/L	20
Ethanol	ND	ug/L	100
Iodomethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	50
4-Methyl-2-pentanone			
(MIBK)	ND	ug/L	10

METHOD BLANK REPORT
 Volatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 624-PP-AP			
Matrix: AQUEOUS			
QC Lot: 08 JUL 90-L QC Run: 10 JUL 90-L			
Styrene	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,2,3-Trichloropropane	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Xylenes (total)	ND	ug/L	5.0
trans-1,2-Dichloroethene	ND	ug/L	5.0
Ethyl methacrylate	ND	ug/L	10
2-Hexanone	ND	ug/L	10

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010192-0001-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0002-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0003-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0004-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0005-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0006-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0007-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0008-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0009-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0010-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0011-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0012-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0013-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0014-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0015-SA	SOIL	8270-S	08 JUL 90-C	08 JUL 90-C
010192-0016-SA	AQUEOUS	625-A	03 JUL 90-A	03 JUL 90-A

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1			DCS	Limits	DCS	Limit
Category: 8270-S								
Matrix: SOIL								
QC Lot: 08 JUL 90-C								
Concentration Units: ug/kg								
Phenol	6670	5550	5310	5430	81	26- 90	4.4	35
2-Chlorophenol	6670	5650	5390	5520	83	25-102	4.7	50
1,4-Dichlorobenzene	3330	2230	2100	2160	65	28-104	6.0	27
N-Nitroso-di- n-propylamine	3330	2670	2550	2610	78	41-126	4.6	38
1,2,4-Trichlorobenzene	3330	2560	2410	2480	75	38-107	6.0	23
4-Chloro-3-methylphenol	6670	6390	5980	6180	93	26-103	6.6	33
Acenaphthene	3330	2650	2480	2560	77	31-137	6.6	19
4-Nitrophenol	6670	6830	6310	6570	99	11-114	7.9	50
2,4-Dinitrotoluene	3330	3090	2940	3020	91	28- 89	5.0	47
Pentachlorophenol	6670	6230	5620	5920	89	17-109	10	47
Pyrene	3330	2840	2610	2720	82	35-142	8.4	36

Category: 625-A
Matrix: AQUEOUS
QC Lot: 03 JUL 90-A
Concentration Units: ug/L

Phenol	100	85.3	78.8	82.0	82	12- 89	7.9	42
2-Chlorophenol	100	89.2	78.5	83.8	84	27-123	13	40
1,4-Dichlorobenzene	50.0	31.4	30.8	31.1	62	36- 97	1.9	28
N-Nitroso-di- n-propylamine	50.0	48.1	46.0	47.0	94	41-116	4.5	38
1,2,4-Trichlorobenzene	50.0	32.7	33.3	33.0	66	39- 98	1.8	28
4-Chloro-3-methylphenol	100	99.3	95.7	97.5	98	23- 97	3.7	42
Acenaphthene	50.0	37.7	37.7	37.7	75	46-118	0.0	31
4-Nitrophenol	100	98.5	99.4	99.0	99	10- 80	0.9	50
2,4-Dinitrotoluene	50.0	49.5	49.6	49.6	99	24- 96	0.2	38
Pentachlorophenol	100	108	68.8	88.4	88	9-103	44	50
Pyrene	50.0	47.4	47.5	47.4	95	26-127	0.2	31

Calculations are performed before rounding to avoid round-off errors in calculated results.

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits
Category: 8270-S				
Matrix: SOIL				
QC Lot: 08 JUL 90-C QC Run: 08 JUL 90-C				
Concentration Units: ug/kg				
Nitrobenzene-d5	1670	1330	80	23-120
2-Fluorobiphenyl	1670	1370	82	30-115
Terphenyl-d14	1670	1550	93	18-137
2-Fluorophenol	3330	2590	78	25-121
Phenol-d5	3330	2580	77	24-113
2,4,6-Tribromophenol	3330	3210	96	19-122

Category: 625-A
 Matrix: AQUEOUS
 QC Lot: 03 JUL 90-A QC Run: 03 JUL 90-A
 Concentration Units: ug/L

Nitrobenzene-d5	100	86.0	86	35-114
2-Fluorobiphenyl	100	74.2	74	43-116
Terphenyl-d14	100	98.2	98	33-141
2-Fluorophenol	200	120	60	21-100
Phenol-d5	200	120	60	10- 94
2,4,6-Tribromophenol	200	159	80	10-123

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT
Semivolatiles Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-C QC Run: 08 JUL 90-C			
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Acetophenone	ND	ug/kg	5000
4-Aminobiphenyl	ND	ug/kg	--
Aniline	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzyl alcohol	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl) ether	ND	ug/kg	5000
bis(2-Chloroisopropyl)-ether	ND	ug/kg	5000
bis(2-Ethylhexyl) phthalate	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
o-Cresol	ND	ug/kg	5000
m & p-Cresol(s)	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
2,6-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
p-Dimethylaminoazobenzene	ND	ug/kg	5000

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-C QC Run: 08 JUL 90-C			
7,12-Dimethylbenz(a)-anthracene	ND	ug/kg	5000
a,a-Dimethylphenethylamine	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
1,3-Dinitrobenzene	ND	ug/kg	5000
4,6-Dinitro-o-cresol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000
Diphenylamine	ND	ug/kg	5000
Ethyl methanesulfonate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
3-Methylcholanthrene	ND	ug/kg	5000
Methyl methanesulfonate	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
1-Naphthylamine	ND	ug/kg	5000
2-Naphthylamine	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitroso-di-n-butylamine	ND	ug/kg	5000
N-Nitrosodimethylamine	ND	ug/kg	5000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
N-Nitrosopiperidine	ND	ug/kg	5000
Pentachlorobenzene	ND	ug/kg	5000

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-AP9-S			
Matrix: SOIL			
QC Lot: 08 JUL 90-C QC Run: 08 JUL 90-C			
Pentachloronitrobenzene	ND	ug/kg	25000
Pentachlorophenol	ND	ug/kg	25000
Phenacetin	ND	ug/kg	5000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
2-Picoline	ND	ug/kg	5000
Pronamide	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4,5-Tetrachloro- benzene	ND	ug/kg	5000
2,3,4,6-Tetrachlorophenol	ND	ug/kg	25000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	25000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Benzidine	ND	ug/kg	--
Benzoic acid	ND	ug/kg	5000
1,2-Diphenylhydrazine	ND	ug/kg	5000
1-Chloronaphthalene	ND	ug/kg	--

Test: 625-AP9-A
 Matrix: AQUEOUS
 QC Lot: 03 JUL 90-A QC Run: 03 JUL 90-A

Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acetophenone	ND	ug/L	10
4-Aminobiphenyl	ND	ug/L	10
Aniline	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzyl alcohol	ND	ug/L	20
bis(2-Chloroethoxy)- methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
bis(2-Chloroisopropyl)- ether	ND	ug/L	10

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 625-AP9-A			
Matrix: AQUEOUS			
QC Lot: 03 JUL 90-A QC Run: 03 JUL 90-A			
bis(2-Ethylhexyl)			
phthalate	ND	ug/L	10
4-Bromophenyl			
phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl			
phenyl ether	ND	ug/L	10
o-Cresol	ND	ug/L	10
m & p-Cresol(s)	ND	ug/L	10
Chrysene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
2,6-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	10
7,12-Dimethylbenz(a)-			
anthracene	ND	ug/L	10
a,a-Dimethylphenethyl-			
amine	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
1,3-Dinitrobenzene	ND	ug/L	10
4,6-Dinitro-o-cresol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Diphenylamine	ND	ug/L	10
Ethyl methanesulfonate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 625-AP9-A			
Matrix: AQUEOUS			
QC Lot: 03 JUL 90-A QC Run: 03 JUL 90-A			
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
3-Methylcholanthrene	ND	ug/L	20
Methyl methanesulfonate	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
Naphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	10
2-Naphthylamine	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	10
N-Nitrosodimethylamine	ND	ug/L	10
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
N-Nitrosopiperidine	ND	ug/L	10
Pentachlorobenzene	ND	ug/L	10
Pentachloronitrobenzene	ND	ug/L	50
Pentachlorophenol	ND	ug/L	50
Phenacetin	ND	ug/L	10
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
2-Picoline	ND	ug/L	10
Pronamide	ND	ug/L	20
Pyrene	ND	ug/L	10
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	20
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10
Benzidine	ND	ug/L	--
Benzoic acid	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	--

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 625-AP9-A			
Matrix: AQUEOUS			
QC Lot: 03 JUL 90-A QC Run: 03 JUL 90-A			
1,2-Diphenylhydrazine	ND	ug/L	50

QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010192-0001-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0001-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0001-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0001-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0002-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0002-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0002-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0002-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0003-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0003-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0003-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0003-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0004-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0004-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0004-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0004-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0005-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0005-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0005-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0005-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0006-SA	SOIL	HG-CVAA-S	20 JUL 90-C	20 JUL 90-C
010192-0006-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0006-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0006-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0007-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0007-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0007-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0007-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0008-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0008-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0008-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0008-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0009-SA	SOIL	HG-CVAA-S	18 JUL 90-B	18 JUL 90-B
010192-0009-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0009-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0009-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0010-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0010-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0010-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0010-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0011-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0011-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0011-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0011-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0012-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0012-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0012-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation (cont.)

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
010192-0012-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0013-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0013-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0013-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0013-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0014-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0014-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0014-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0014-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0015-SA	SOIL	HG-CVAA-S	18 JUL 90-C	18 JUL 90-C
010192-0015-SA	SOIL	AS-FAA-S	27 JUL 90-R	27 JUL 90-R
010192-0015-SA	SOIL	SE-FAA-S	20 JUL 90-F	20 JUL 90-F
010192-0015-SA	SOIL	ICP-S	27 JUL 90-R	27 JUL 90-R
010192-0016-SA	AQUEOUS	AS-FAA-AT	16 JUL 90-D	16 JUL 90-D
010192-0016-SA	AQUEOUS	SE-FAA-AT	16 JUL 90-D	16 JUL 90-D
010192-0016-SA	AQUEOUS	HG-CVAA-AT	17 JUL 90-D	17 JUL 90-D
010192-0016-SA	AQUEOUS	ICP-AT	16 JUL 90-D	16 JUL 90-D
010192-0016-SA	AQUEOUS	PB-FAA-AT	16 JUL 90-D	16 JUL 90-D

DUPLICATE CONTROL SAMPLE REPORT Metals Analysis and Preparation

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1			DCS	Limits	DCS	Limit
Category: HG-CVAA-S Matrix: SOIL QC Lot: 18 JUL 90-B Concentration Units: mg/kg								
Mercury	0.50	0.524	0.535	0.530	106	75-125	2.1	20
Category: AS-FAA-S Matrix: SOIL QC Lot: 27 JUL 90-R Concentration Units: mg/kg								
Arsenic	4	3.68	3.93	3.80	95	75-125	6.6	20
Category: SE-FAA-S Matrix: SOIL QC Lot: 20 JUL 90-F Concentration Units: mg/kg								
Selenium	1.0	1.16	1.22	1.19	119	75-125	5.0	20
Category: ICP-S Matrix: SOIL QC Lot: 27 JUL 90-R Concentration Units: mg/kg								
Aluminum	200	196	200	198	99	75-125	2.0	20
Antimony	50	47.8	47.4	47.6	95	75-125	0.8	20
Arsenic	50	44.2	45.1	44.6	89	75-125	2.0	20
Barium	200	176	179	177	89	75-125	1.7	20
Beryllium	5.0	5.20	5.30	5.25	105	75-125	1.9	20
Cadmium	5.0	3.87	4.03	3.95	79	75-125	4.1	20
Calcium	10000	9770	9940	9860	99	75-125	1.7	20
Chromium	20	19.1	19.6	19.4	97	75-125	2.6	20
Cobalt	50	42.4	43.9	43.2	86	75-125	3.5	20
Copper	25	23.4	23.7	23.6	94	75-125	1.3	20
Iron	100	96.4	100	98.2	98	75-125	3.7	20
Lead	50	41.9	43.4	42.6	85	75-125	3.5	20
Magnesium	5000	4850	4880	4860	97	75-125	0.6	20
Manganese	50	43.9	45.4	44.6	89	75-125	3.4	20
Nickel	50	43.5	44.5	44.0	88	75-125	2.3	20
Potassium	5000	4820	4740	4780	96	75-125	1.7	20

Calculations are performed before rounding to avoid round-off errors in calculated results..

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Spiked	Concentration		AVG	Accuracy		Precision	
		DCS1	Measured DCS2		DCS	Average(%) Limits	(RPD) DCS Limit	

Category: ICP-S
Matrix: SOIL
QC Lot: 27 JUL 90-R
Concentration Units: mg/kg

Silver	5.0	4.90	5.01	4.96	99	75-125	2.2	20
Sodium	10000	9660	9730	9700	97	75-125	0.7	20
Vanadium	50	47.9	49.1	48.5	97	75-125	2.5	20
Zinc	50	42.5	43.5	43.0	86	75-125	2.3	20

Category: HG-CVAA-S
Matrix: SOIL
QC Lot: 20 JUL 90-C
Concentration Units: mg/kg

Mercury	0.50	0.497	0.477	0.487	97	75-125	4.1	20
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Category: HG-CVAA-S
Matrix: SOIL
QC Lot: 18 JUL 90-C
Concentration Units: mg/kg

Mercury	0.50	0.551	0.546	0.548	110	75-125	0.9	20
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Category: AS-FAA-AT
Matrix: AQUEOUS
QC Lot: 16 JUL 90-D
Concentration Units: mg/L

Arsenic	0.04	0.0342	0.0351	0.0346	87	75-125	2.6	20
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Category: SE-FAA-AT
Matrix: AQUEOUS
QC Lot: 16 JUL 90-D
Concentration Units: mg/L

Selenium	0.01	0.0106	0.0104	0.0105	105	75-125	1.9	20
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Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation (cont.)

Analyte	Spiked	Concentration		Measured	AVG	Accuracy		Precision	
		DCS1	DCS2			DCS	Average(%) Limits	(RPD)	DCS Limit

Category: HG-CVAA-AT
Matrix: AQUEOUS
QC Lot: 17 JUL 90-D
Concentration Units: mg/L

Mercury	0.0010	0.00104	0.00103	0.00104	104	75-125	1.0	20
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Category: ICP-AT
Matrix: AQUEOUS
QC Lot: 16 JUL 90-D
Concentration Units: mg/L

Aluminum	2.0	1.98	1.95	1.96	98	75-125	1.7	20
Antimony	0.5	0.470	0.458	0.464	93	75-125	2.6	20
Arsenic	0.5	0.468	0.448	0.458	92	75-125	4.5	20
Barium	2.0	1.80	1.77	1.79	89	75-125	1.9	20
Beryllium	0.05	0.0478	0.0476	0.0477	95	75-125	0.5	20
Cadmium	0.05	0.0499	0.0451	0.0475	95	75-125	10	20
Calcium	100	99.9	99.9	99.9	100	75-125	0.0	20
Chromium	0.2	0.190	0.188	0.189	95	75-125	0.9	20
Cobalt	0.5	0.449	0.438	0.443	89	75-125	2.3	20
Copper	0.25	0.243	0.244	0.244	97	75-125	0.7	20
Iron	1.0	0.957	0.965	0.961	96	75-125	0.8	20
Lead	0.5	0.446	0.442	0.444	89	75-125	0.8	20
Magnesium	50	50.7	50.7	50.7	101	75-125	0.1	20
Manganese	0.5	0.456	0.452	0.454	91	75-125	0.8	20
Nickel	0.5	0.449	0.448	0.449	90	75-125	0.4	20
Potassium	50	50.0	50.4	50.2	100	75-125	0.9	20
Silver	0.05	0.0514	0.0510	0.0512	102	75-125	0.8	20
Sodium	100	99.9	101	100	100	75-125	1.2	20
Vanadium	0.5	0.497	0.490	0.494	99	75-125	1.4	20
Zinc	0.5	0.455	0.448	0.452	90	75-125	1.7	20

Category: PB-FAA-AT
Matrix: AQUEOUS
QC Lot: 16 JUL 90-D
Concentration Units: mg/L

Lead	0.02	0.0226	0.0217	0.0222	111	75-125	4.1	20
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Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-S			
Matrix: SOIL			
QC Lot: 18 JUL 90-B QC Run: 18 JUL 90-B			
Mercury	ND	mg/kg	0.10
Test: AS-FAA-S			
Matrix: SOIL			
QC Lot: 27 JUL 90-R QC Run: 27 JUL 90-R			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-S			
Matrix: SOIL			
QC Lot: 20 JUL 90-F QC Run: 20 JUL 90-F			
Selenium	ND	mg/kg	0.50
Test: ICP-S			
Matrix: SOIL			
QC Lot: 27 JUL 90-R QC Run: 27 JUL 90-R			
Antimony	ND	mg/kg	6.0
Barium	ND	mg/kg	1.0
Beryllium	ND	mg/kg	0.20
Cadmium	ND	mg/kg	0.50
Chromium	ND	mg/kg	1.0
Cobalt	ND	mg/kg	1.0
Copper	ND	mg/kg	2.0
Lead	ND	mg/kg	5.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Vanadium	ND	mg/kg	1.0
Zinc	ND	mg/kg	2.0

METHOD BLANK REPORT
 Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-S Matrix: SOIL QC Lot: 20 JUL 90-C QC Run: 20 JUL 90-C			
Mercury	ND	mg/kg	0.10
Test: HG-CVAA-S Matrix: SOIL QC Lot: 18 JUL 90-C QC Run: 18 JUL 90-C			
Mercury	ND	mg/kg	0.10
Test: AS-FAA-AT Matrix: AQUEOUS QC Lot: 16 JUL 90-D QC Run: 16 JUL 90-D			
Arsenic	ND	mg/L	0.0050
Test: SE-FAA-AT Matrix: AQUEOUS QC Lot: 16 JUL 90-D QC Run: 16 JUL 90-D			
Selenium	ND	mg/L	0.0050
Test: HG-CVAA-AT Matrix: AQUEOUS QC Lot: 17 JUL 90-D QC Run: 17 JUL 90-D			
Mercury	ND	mg/L	0.00020
Test: ICP-AT Matrix: AQUEOUS QC Lot: 16 JUL 90-D QC Run: 16 JUL 90-D			
Antimony	ND	mg/L	0.060
Barium	ND	mg/L	0.010
Beryllium	ND	mg/L	0.0020
Cadmium	0.0055	mg/L	0.0050
Chromium	ND	mg/L	0.010
Cobalt	ND	mg/L	0.010

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

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

Test: ICP-AT

Matrix: AQUEOUS

QC Lot: 16 JUL 90-D QC Run: 16 JUL 90-D

Copper	ND	mg/L	0.020
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.010
Zinc	ND	mg/L	0.020

Test: PB-FAA-AT

Matrix: AQUEOUS

QC Lot: 16 JUL 90-D QC Run: 16 JUL 90-D

Lead	ND	mg/L	0.0050
------	----	------	--------

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
 Arvada, Colorado 80002
 303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essex

Enseco Client Giant Definery

Project RFE

Sampling Co. Giant

Sampling Site Ciniza

Team Leader Claudia Rosendale

RMAL # 10192

CHAIN OF CUSTODY

No.

SAMPLE SAFE™ CONDITIONS

1. Packed by: _____ Seal # _____
2. Seal Intact Upon Receipt by Sampling Co.: Yes ☒ No ☐
3. Condition of Contents: Good
4. Sealed for Shipping by: C. Rosendale
5. Initial Contents Temp.: _____ °C Seal # _____
6. Sampling Status: Done Continuing Until _____
7. Seal Intact Upon Receipt by Laboratory: Yes ☒ No ☐
8. Contents Temperature Upon Receipt by Lab: _____ °C
9. Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-28-90	9:07	RFE1004V6.0	SOIL	2	Metals, 8240, 8270	
6-28-90	9:32	RFE1004V9.0	SOIL	2	Metals, 8240, 8270	
6-28-90	9:45	RFE1004V12.5	SOIL	2	Metals, 8240, 8270	
6-28-90	10:20	RFE1005V6.0	SOIL	2	Metals, 8240, 8270	
6-28-90	10:55	RFE1005V3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	11:03	RFE1005V6.0	SOIL	2	Metals, 8240, 8270	
6-28-90	11:18	RFE1005V9.0	SOIL	2	Metals, 8240, 8270	
6-28-90	11:34	RFE1005V12.5	SOIL	2	Metals, 8240, 8270	
6-28-90	10:55	RFE1005V3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	11:50	RFE1002V0.0	SOIL	2	Metals, 8240, 8270	

CUSTODY TRANSFERS PRIOR TO SHIPPING

Relinquished by: (signed) Claudia Rosendale Date 6-28-90 Time 2:10pm

Received by: (signed) _____ Date _____ Time _____

2 _____

3 _____

SHIPPING DETAILS

Delivered to Shipper by: Claudia Rosendale

Method of Shipment: Fed Express Airbill # 2934290

Received for Lab: RMAL Signed: Bob Reid Date/Time 6/28/90

Enseco Project No. 10192

Enseco - Rocky Mountain Analytical

4955 Yarrow Street
Arvada, Colorado 80002
303/421-6611 Facsimile: 303/431-7171

Attn: Julie Essex

Enseco Client Giant Refinery

Project RFT

Sampling Co. Giant

Sampling Site Cupizza

Team Leader C. Rosendale

RNAL # 1092

CHAIN OF CUSTODY

SAMPLE SAFE™ CONDITIONS

- Packed by: _____ Seal # _____
- Seal Intact Upon Receipt by Sampling Co.: Yes ☒ No ☐
- Condition of Contents: Good
- Sealed for Shipping by: C. Rosendale
- Initial Contents Temp.: _____ °C Seal # _____
- Sampling Status: Done Continuing Unlil _____
- Seal Intact Upon Receipt by Laboratory: Yes ☒ No ☐
- Contents Temperature Upon Receipt by Lab: _____ °C
- Condition of Contents: _____

Date	Time	Sample ID/Description	Sample Type	No. Containers	Analysis Parameters	Remarks
6-28-90	11:58	RFT1002V3.0	SOIL	2	Metals, 8240, 8270	
6-28-90	12:03	RFT1002V6.0	SOIL	2	Metals, 8240, 8270	
6-28-90	12:13	RFT1002V9.0	SOIL	2	Metals, 8240, 8270	
6-28-90	12:40	RFT1002V12.5	SOIL	2	Metals, 8240, 8270	
6-28-90	12:34	RFT1005D12.5	SOIL	2	Metals, 8240, 8270	
6-28-90	12:00	RFT1002-E3.0	Water	6	SEE Attachment	
6-28-90	—	Trip Blank	Water	1	VOA	

CUSTODY TRANSFERS PRIOR TO SHIPPING

- Relinquished by: (signed) Blanchard Date 6-28-90 Time 2:00pm
- Received by: (signed) _____ Date/Time _____
- _____

SHIPPING DETAILS

- Delivered to Shipper by: C. Rosendale
- Method of Shipment: Fed Express Airbill # _____
- Received for Lab: RNAL Signed: Bob Rife Date/Time 6/29/90 4:24
- Enseco Project No. 10192

SECTION 10.0

Response to RFI Phase I Draft
Report Deficiencies



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

MAR 19 1991

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. John J. Stokes, Manager
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 7301

RE: RFI Phase I Report - Giant Refining Co.
NMD048918817

Dear Mr. Stokes:

We have completed our technical review of your RFI Phase I Report submitted on November 27, 1990, and have determined the Report to be deficient. A list of deficiencies is enclosed for your review.

You shall have 30 days from the receipt of this letter to submit a modified report which addresses the enclosed deficiencies. If this modified report is not approved, we may make further modifications as required.

If you have any questions concerning this matter, please contact Richard Mayer of my staff at (214) 655-6775.

Sincerely yours,

Jack Davis

Allyn M. Davis
Director
Hazardous Waste Management Division

Enclosure

cc: Kathleen Sisneros, NMEID

RECEIVED

DEFICIENCIES OF GIANT

RFI PHASE I REPORT

1. Giant needs to include in the RFI Report a recommendation section which includes further sampling for the following SWMUs:
 - A. Tank Farm - Tanks 451, 452, 453, 567, 568, 569, 570, 571, 572, and 573;
 - B. Sludge Pits; and
 - C. Overflow ditch and fan out area from the Railroad Rack Lagoon.

This should include where soil samples (or any other media) will be taken and the constituents to be analyzed. A schedule for completing this work should be included.
2. The RFI Report should also include a decision by Giant on the future use of the Railroad Rack Lagoon. The Agency feels that 2 options are available to Giant. They are: 1) Giant continue to operate the lagoon with continued soil/ground water monitoring of the unit or 2) Giant close the lagoon in the near future (6 months).
3. The RFI Report should include a recommendation by Giant on whether further monitoring or no further action is required for the Inactive Landfarm and the Natural Drainage Area.

Section 10.2
Response to Phase I RFI Deficiency Report

The initial sampling for Phase I of Giant Refining Company's RCRA Facility Investigation (RFI) has been completed with the draft report submitted to the Environmental Protection Agency (EPA) on November 27, 1990. On March 22, 1991, Giant received a letter from EPA (Section 10.1) which declared the report to be deficient. The enclosure contained a list of three (3) deficiencies to address and include in the final report. Each of the deficiencies are addressed in the following text.

10.2.1 Additional Sampling Requirements

SWMU #6 Tank Farm

The original sampling plan consisted of one vertical sample at the manway and one angle sample (no specific location) at each of the ten (10) tanks which has previously contained leaded materials. The following chart indicates metals (if tolerances were exceeded) and total BTEX levels for the tank farm samples. Concentrations are reported in ppm.

Sample #	Metals - pb(Ni)			Total BTEX		
	Sample Depths					
	0	3½	7	0	3½	7
01	NA	NA	NA	ND	0.64	28.6
02	NA	NA	NA	ND	ND	ND
03	NA	27.7	NA	ND	ND	ND
04	NA	NA	NA	ND	ND	2.46
05	138	NA	NA	ND	119	0.26
06	28.5	NA	NA	0.37	7.6	54.1
07	NA	NA	NA	ND	ND	ND
08	23.1	NA	NA	ND	ND	51.3
09	NA	NA	NA	ND	ND	ND
10	129(15.2)	NA	NA	ND	2.68	4.66
11	44.6	21.4	23.9	ND	269	248.4
12	736(41.3)	NA	NA	488	1,677	160
13	NA	NA	NA	ND	ND	ND
14	57.4	NA	NA	1.58	28	460
15	NA	NA	NA	ND	ND	ND
16	238(32.9)	301(58.2)	55.3	0.47	41.3	23.9
17	NA	NA	NA	ND	ND	ND
18	NA	NA	NA	ND	113.6	26.65
19	19.1	NA	NA	180	ND	0.42
20	21.6(49.8)	NA	NA	ND	104.6	10.0

After reviewing this chart, Giant has decided that nine (9) additional vertical samples should be collected at a depth of 11 to 11½ feet below ground surface. These nine (9) samples will be collected in close proximity to the original sample location of concern. The following chart indicates the original sample number designation, the corresponding new sample number designation and the analytical parameters that will be tested.

Original Sample #	New Sample #	Analytical
01	21	BTEX
06	22	BTEX
08	23	BTEX
10	24	BTEX
11	25	BTEX, Lead
12	26	BTEX
14	27	BTEX
16	28	BTEX, Lead, Nickel
18	29	BTEX

The samples will be collected by excavating to 11 feet with a backhoe and using a hand auger to collect the actual samples as approved in the original generic sampling plan. A lithographic log with PID recordings will be maintained for each sample location. The analytical parameters will also be analyzed by methodology approved in the original generic sampling plan. Figures 10-2 and 10-3 specifies the tank numbers and the associated sample locations. This additional sampling, which is four (4) feet deeper than the deepest original sample, will allow a more thorough evaluation of migration if any contamination does exist.

SWMU #10 Sludge Pits

The sludge pit sampling consisted of two general areas: a) the overflow pipe from the pit with samples collected at ground level and 3.0 feet and b) sludge pit 1 & 2 with samples collected at ground level, 3.0 feet, 6.0 feet, 9.0 feet and 12½ feet.

Sample #01 was collected at the overflow pipe. This sample contained slightly elevated levels of chromium and no detectable organics. The chromium levels were determined to be insignificant.

Samples #02 and #03 were collected in sludge pit 1. The 3.0 foot deep sample of sample #02 indicated slightly elevated levels of chromium and zinc and a total organic concentration of 84.0 ppm. The remaining sample intervals of sample #02 and all sample intervals of sample #03 indicated minimal metal concentrations and no detection of organics.

Samples #04 and #05 were collected in sludge pit 2. Samples indicated the presence of layered organics in this area. Each of the two 6.0 foot deep samples contained elevated levels of metals. Sample #05 was the worst with levels of chromium, copper, lead and zinc. Both of these samples also contained organics with levels as high as 2,847 ppm total organics.

Since an organic layer was detected near the 12½ foot sample depth in sludge pit 2, it has been determined that additional borings should be made to depths of 18 feet. Two additional borings (samples 1006 and 1007) will be made in sludge pit 2 and one additional boring (sample 1008) will be made in sludge pit 1. In sludge pit 2, samples will be collected at the 15 to 15½ foot layer. The borings in sludge pit 1 and 2 will consist of a visual and lithologic log and PID recordings. If organic layers are visible or the

PID recordings exceed the background by more than 2.5 units. Samples will be collected at the 15 to 15½ foot layer in sludge pit 1 and the 18 foot layer in sludge pit 1 and 2.

The samples will be collected by using the backhoe and hand auger. Each sample collected will be analyzed for chromium, copper, lead and zinc as outlined in Table 10-1. They will also be analyzed for Method 8240 and Method 8270 Priority Pollutant lists outlined in Table 10-2 and Table 10-3 respectively. These are the same parameters and methodology outlined in the approved generic sampling plan and the same parameters listed in the approved workplan for SWMU #10 except for some of the metals. Figure 10-5 details the location of each specific sample point.

SWMU #8 - Overflow Ditch and Fan Out Area From the Railroad Rack Lagoon

The railroad rack lagoon sampling consisted of two general areas: a) the lagoon area with samples collected at 5.0 feet, 8.0 feet, and 10½ feet, and b) the overflow ditch and fan out area with samples collected at the surface, 2.0 feet and 4½ feet.

Sample #	Volatiles(ppm)			Semi-volatiles(ppm)		
	Sample Depth					
	5	8	10½	5	8	10½
01	5.77	ND	ND	26.57	ND	ND
02	ND	0.50	0.59	ND	ND	ND
03	6.60	ND	ND	37.60	ND	ND
04	ND	5.49	ND	ND	64.0	ND
05	ND	ND	ND	ND	ND	ND
06	ND	ND	ND	ND	ND	ND

Giant does not believe additional sampling is required around the lagoon.

Samples #07 through #13 were collected around the ditch and fan out area. Sample #07 was the only sample with any elevated levels of metals. However, none of the levels were high enough to raise specific concern. Total concentrations of volatiles semi-volatiles are as follows:

Sample #	Volatiles(ppm)			Semi-volatiles(ppm)		
	Sample Depths					
	0	2	4½	0	2	4½
07	ND	ND	ND	ND	50.00	ND
08	ND	ND	ND	ND	73.00	ND
09	ND	ND	ND	ND	106.00	6.70
10	ND	ND	ND	ND	ND	ND
11	ND	ND	ND	ND	ND	131.0
12	ND	ND	ND	ND	ND	ND
13	ND	ND	2.75	ND	ND	ND
13D	ND	ND	ND	ND	ND	ND

As a result of detectable organics at the 4½ foot deep sample, Giant has decided that additional samples should be collected. Two additional samples will be collected at depth intervals of 7.0 to 7½ feet. The location of the new samples are detailed in Figure 10-4. The samples will be analyzed for the 8270 portion of the skinner list constituents as outlined in Table 10-4. The samples will be collected by using a backhoe and hand auger as approved in the generic sampling plan. The analytical parameters are approved in the sampling plan and workplan. A lithologic log and PID readings will be maintained.

10.2.2 Railroad Rack Lagoon

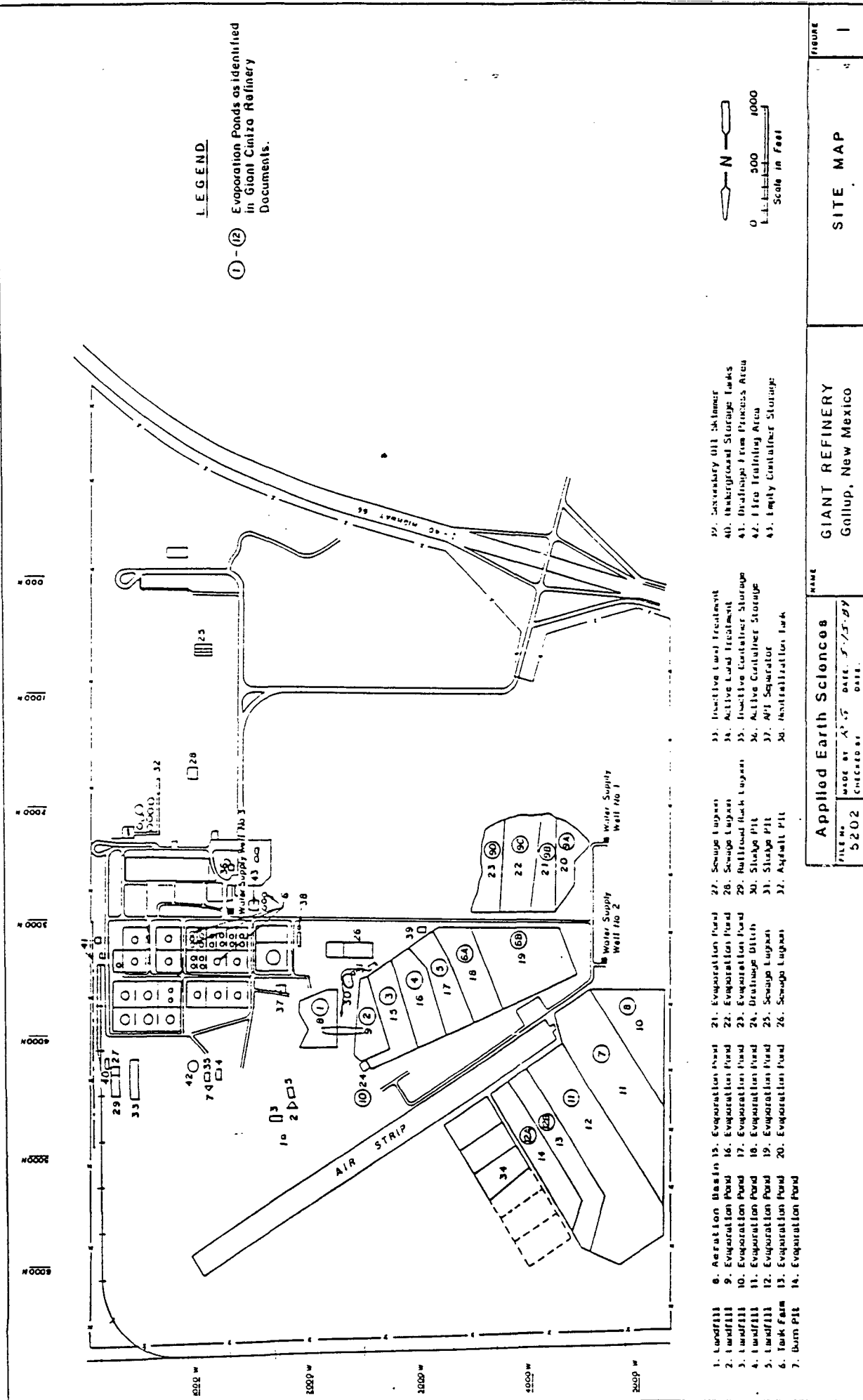
Giant will proceed with plans to close the railroad rack lagoon. An evaluation will be done with the sewer drainage system that is associated with the railroad area. The drainage system will be blocked or dismantled at the most efficient location. A sump pump and level control switch will be installed to pump all process waters from this drainage area to the sewer system that flows to the API separator. The railroad rack lagoon will be emptied with oily liquids being transferred through the API separator. Any oily soils on the slope of the lagoon will be analyzed, then removed and disposed of appropriately. The lagoon will then remain intact as an overflow pit for the domestic sewage lagoon which presently overflows into it.

10.2.3 Inactive Landfarm and the Natural Drainage Area

SWMU #9 contains slightly elevated levels of chromium (42.3 ppm and 102 ppm) and zinc (69.6 ppm and 157 ppm) at the surface sample (0-½ foot depth) of sample #04 and #07 respectively. The only volatile organic detected was ethanol. Ethanol was detected in sample numbers 01, 02, 04 and 06 with the maximum concentration of 24.0 ppm. The only semi-volatile organic detected was chrysene in sample #06 at 26.0 ppm. Giant does not believe this SWMU requires any additional monitoring or sampling. Therefore, we believe no further action is required for the Inactive Landfarm and Natural Drainage Ditch.

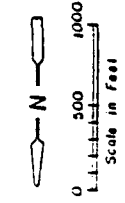
10.0 Sampling and Reporting Schedule

Giant proposes to collect the additional samples for SWMU #6, SWMU #8 and SWMU #10 in conjunction with the Phase II RFI sampling event which is scheduled from April 29, 1991 to May 7, 1991. Groundwater samples will be collected from April 29, 1991 to May 3, 1991 in conjunction with a four day New Mexico Oil Conservation Division inspection and sampling event. Soil sampling will begin on May 6, 1991. The completed analytical reports are expected by late June. Giant will submit a separate report for this additional Phase I analytical. It will be submitted by August 31, 1991 as a supplement to the Phase I RFI Final Report.



LEGEND

① - ⑫ Evaporation Ponds as Identified in Giant Refinery Documents.

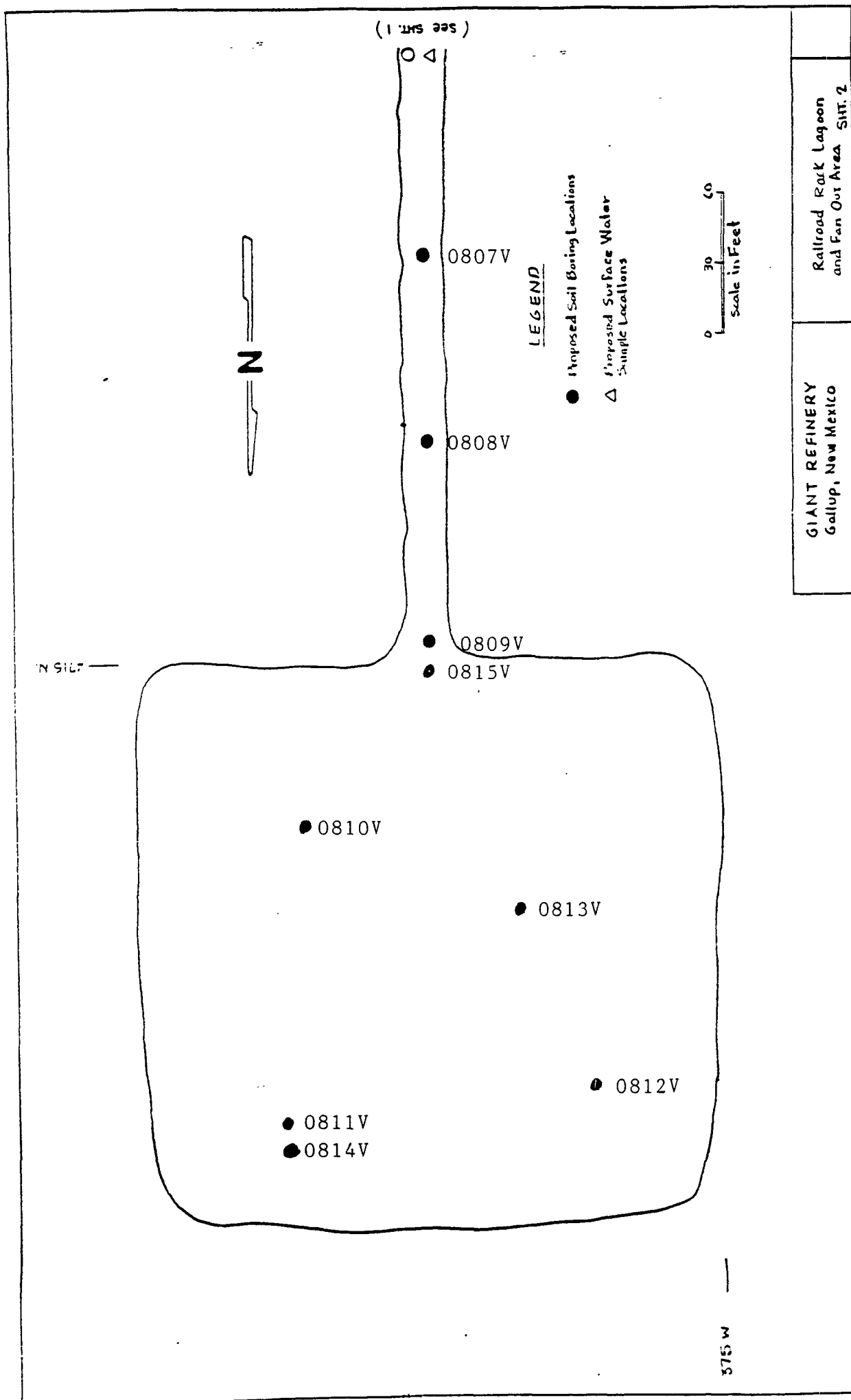


- 1. Landfill
- 2. Landfill
- 3. Landfill
- 4. Landfill
- 5. Landfill
- 6. Tank Farm
- 7. Burn Pit
- 8. Aeration Basin
- 9. Evaporation Pond
- 10. Evaporation Pond
- 11. Evaporation Pond
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- 100. Evaporation Pond

Applied Earth Sciences FILE NO. 5202 MADE BY A.S. DATE 5/15/89 CHECKED BY DATE		NAME GIANT REFINERY Gallup, New Mexico	SITE MAP	FIGURE 1
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TANK SAMPLES

<u>TANK #</u>	<u>TYPE</u>	<u>SAMPLE #</u>
451	Angle	RFI0601A
	Vertical	RFI0602V
452	Angle	RFI0603A
	Vertical	RFI0604V
453	Angle	RFI0605A
	Vertical	RFI0606V
567	Angle	RFI0607A
	Vertical	RFI0608V
568	Angle	RFI0609A
	Vertical	RFI0610V
569	Angle	RFI0611A
	Vertical	RFI0612V
570	Angle	RFI0613A
	Vertical	RFI0614V
571	Angle	RFI0615A
	Vertical	RFI0616V
572	Angle	RFI0617A
	Vertical	RFI0618V
3	Angle	RFI0619A
	Vertical	RFI0620V
451	Vertical	RFI0621V
453	Vertical	RFI0622V
567	Vertical	RFI0623V
568	Vertical	RFI0624V
569	Vertical	RFI0625V
569	Vertical	RFI0626V
570	Vertical	RFI0627V
571	Vertical	RFI0628V
572	Vertical	RFI0629V



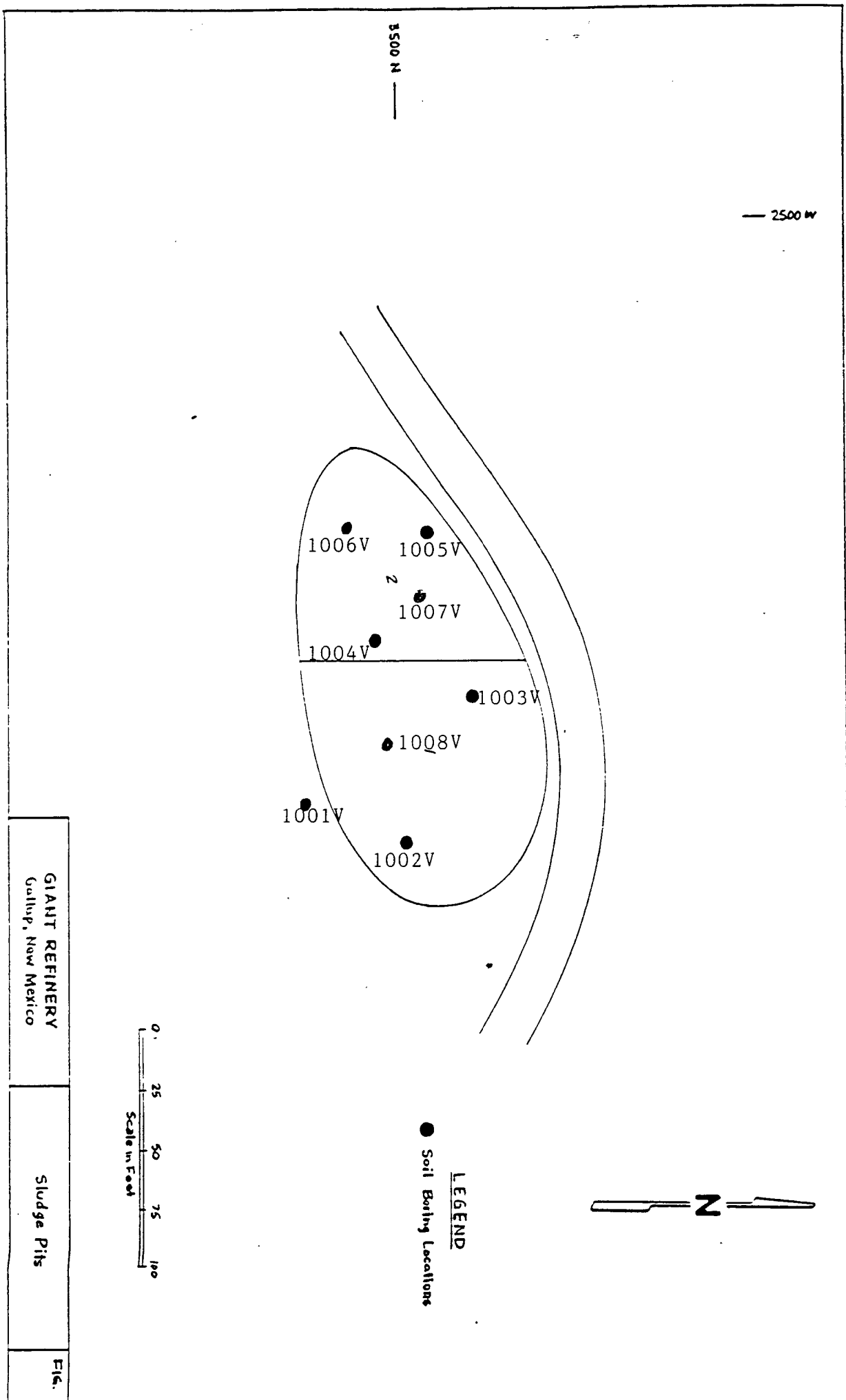


TABLE -1
BACKGROUND METALS

Total Metals

<u>Parameter</u>	<u>Analytical Method</u>	<u>Reporting Limit mg/kg</u>
Antimony	6010	6.0
Arsenic	7060	0.5
Barium	6010	1.0
Beryllium	6010	0.2
Cadmium	6010	0.5
Chromium	6010	1.0
Cobalt	6010	1.0
Copper	6010	2.0
Lead	6010	5.0
Mercury	7471	0.2
Nickel	6010	4.0
Potassium	6010	500
Selenium	7740	0.5
Vanadium	6010	1.0
Zinc	6010	2.0

TABLE-2
PRIORITY POLLUTANT VOLATILES

Method 8240

<u>Parameter</u>	<u>Reporting Limits ug/kg</u>
Acetone	5,000
Acrolein	10,000
Acrylonitrile	10,000
Benzene	500
Bromodichloromethane	500
Bromoform	500
Bromomethane(methyl bromide)	1,000
Carbon disulfide	500
Carbon tetrachloride	500
Chlorobenzene	500
Chlorodibromoethane	500
Chloroethane	1,000
2-Chloroethylvinyl ether	1,000
Chloroform	500
Chloromethane	1,000
Dibromomethane	500
1,4 - Dichloro-2-butane	-
trans-1,4-Dichloro-2-butene	500
Dichlorodifluoromethane	2,000
1,1-Dichloroethane	500
1,2-Dichloroethane	500
1,1-Dichloroethylene	500
trans-1,2-Dichloroethylene	500
1,2-Dichloropropane	500
cis-1,3-Dichloropropene	500
trans-1,3-Dichloropropene	500
Ethanol	10,000
Ethyl benzene	500
Ethyl methacrylate	1,000
2-Hexanone	1,000
Iodomethane	500
Methylene Chloride	500
Methyl ethyl ketone (2-Butanone)	1,000
Methyl isobutyl ketone (4-methyl-2-pentanone)	1,000
Styrene	500
1,1,2,2,-Tetrachloroethane	500
Tetrachloroethylene	500
Toluene	500
1,1,1-Trichloroethane	500
1,1,2-Trichloroethane	500
Trichloroethylene	500
Trichlorofluoromethane	500
1,2,3-Trichloropropane	500
Vinyl acetate	1,000
Vinyl chloride	1,000
Xylenes	500

TABLE-3
PRIORITY POLLUTANT SEMIVOLATILES

<u>Parameter</u>	<u>Method 8270</u>	<u>Reporting Limits ug/kg</u>
Acenaphthene		5,000
Acenaphthylene		5,000
Acetophenone		5,000
4-Aminobiphenyl		-
Aniline		5,000
Anthracene		5,000
Benzidine		50,000
Benzoic Acid		5,000
Benzo(a)anthracene		5,000
Benzo(b)fluoranthene		5,000
Benzo(k)fluoranthene		5,000
Benzo(g,h,i)perylene		5,000
Benzo(a)pyrene		5,000
Benzyl alcohol		5,000
Bis(2-chloroethoxy)methane		5,000
Bis(2-chloroethyl)ether		5,000
Bis(2-chloroisopropyl)ether		
[bis(2-chloro-1 methylethyl)ether]		5,000
Bis(2-ethylhexyl)phthalate		5,000
4-Bromophenyl phenyl ether		5,000
Butyl benzyl phthalate		5,000
4-Chloroaniline		5,000
4-Chloro-3-methylphenol		5,000
1-Chloronaphthene		5,000
2-Chloronaphthene		5,000
2-Chlorophenol		5,000
4-Chlorophenyl phenyl ether		5,000
Chrysene		5,000
Dibenzo(a,j)acridine		-
Dibenzo(a,h) anthracene		5,000
Dibenzo furans(tetrachloro, pentachloro, hexachloro)		-
Di-n-butylphthalate		5,000
1,2-Dichlorobenzene		5,000
1,3-Dichlorobenzene		5,000
1,4-Dichlorobenzene		5,000
3,3-Dichlorobenzidine		10,000
2,4-Dichlorophenol		5,000
2,6-Dichlorophenol		5,000
Diethyl phthalate		5,000
p(Dimethylamino)azobenzene		5,000
7,12-Dimethylbenz(a)anthracene		5,000
aa-Dimethylphenethylamine		5,000
2,4-Dimethylphenol		5,000
Dimethyl phthalate		5,000
4,6-Dinitro-2-methylphenol		25,000
2,4-Dinitrophenol		25,000
2,4-Dinitrotoluene		5,000

TABLE-3 Continued

2,6-Dinitrotoluene	5,000
Di-n-octyl phthalate	5,000
Diphenylamine	5,000
1,2-Diphenylhydrazine	5,000
Ethyl methanesulfonate	5,000
Fluoranthene	5,000
Flourene	5,000
Hexachlorobenzene	5,000
Hexachloro-1,3-butadiene	5,000
Hexachlorocyclopentadiene	5,000
Hexachloroethane	5,000
Indeno(1,2,3-cd)pyrene	5,000
Isophorene	5,000
3-Methylcholanthrene	5,000
Methyl methanesulfonate	5,000
2-Methylnaphthalene	5,000
2-Methylphenol	5,000
3-Methylphenol	5,000
4-Methylphenol	5,000
Naphthalene	5,000
1-Naphthylamine	5,000
2-Naphthylamine	5,000
2-Nitroaniline	25,000
3-Nitroaniline	25,000
4-Nitroaniline	25,000
Nitrobenzene	5,000
2-Nitrophenol	5,000
4-Nitrophenol	25,000
N-Nitrosodimethylamine	5,000
N-Nitroso-di-n-butylamine	5,000
N-Nitroso-di-n-propylamine	5,000
N-Nitrosopiperidine	5,000
N-Nitrosodiphenylamine	5,000
Pentachlorobenzene	5,000
Pentachloronitrobenzene	25,000
Pentachlorophenol	25,000
Phenacetin	5,000
Phenanthrene	5,000
Phenol	5,000
2-Picoline	5,000
Pronamide	5,000
Pyrene	5,000
1,2,4,5-Tetrachlorobenzene	5,000
2,3,4,6-Tetrachlorophenol	25,000
1,2,4-Trichlorobenzene	5,000
2,4,5-Trichlorophenol	25,000
2,4,6-Trichlorophenol	5,000

TABLE-4
SKINNER LIST

METHOD 8240

<u>Parameter</u>	<u>Reporting Limit (ug/kg)</u>
Benzene	500
Carbon disulfide	500
Chlorobenzene	500
2-Chloroethylvinyl ether	1,000
1,2-Dibromomethane	1,000
1,2-Dichloroethane	500
1,4-Dioxane	50,000
Ethyl Benzene	500
Methyl ethyl ketone (2-butanone)	1,000
Styrene	500
Toluene	500
Xylenes	500

METHOD 8270

Anthracene	5,000
Benzenethiol	-
Benzo(a)anthracene	5,000
Benzo(b)fluoranthene	5,000
Benzo(k)fluoranthene	5,000
Benzo(a)pyrene	5,000
Bis(2-ethylhexyl)phthalate	5,000
Butyl benzyl phthalate	5,000
Chrysene	5,000
Dibenzo(a,j)acridine	-
Dibenzo(a,h)anthracene	5,000
Di-n-butylphthalate	5,000
1,2-Dichlorobenzene	5,000
1,3-Dichlorobenzene	5,000
1,4-Dichlorobenzene	5,000
Diethyl phthalate	5,000
7,12-Dimethylbenz(a)anthracene	5,000
2,4-Dimethylphenol	5,000
Dimethyl phthalate	5,000
2,4-Dinitrophenol	25,000
Di-n-octyl phthalate	5,000
Fluoranthene	5,000
Indene	5,000
Methylchrysene	-
1-Methylnaphthalene	5,000
2-Methylphenol	5,000
3-Methylphenol	5,000
4-Methylphenol	5,000
Naphthalene	5,000
4-Nitrophenol	25,000
Phenanthrene	5,000

TABLE-4 Continued

Phenol	5,000
Pyrene	5,000
Pyridine	10,000
Quinoline	25,000

TECH NOTES

Analytical Services

RADIAN
CORPORATIONNumber 3
Revised, April 1990**GC/MS TARGET LISTS
MADE SIMPLE**

To simplify project planning and site review, *Tech Note 3* provides a table of gas chromatographic/mass spectrometric (GC/MS) volatile and semivolatile organic chemicals covered by EPA's major water and waste regulations. Pesticides normally analyzed by gas chromatographic methods have been omitted from the lists.

**NEW TCLP
LIST INCLUDED**

Be aware that the table of GC/MS volatile compounds can change as EPA amends its regulations or promulgates new ones. Note, also, that there are two separate TCLP lists - Toxicity and Land ban - for solvent wastes (F001-F005) and those containing dioxins (F020-F023; F026-F028). Stay aware of changes in regulations by referring to appropriate technical or trade journals or to the *Federal Register*.

In addition, call us for an update from time to time - we will be happy to advise you on changes to *Tech Note 3*. And as always, Radian's Marketing Managers and Client Service Coordinators will actively help you identify the best analysis methods and the most appropriate compound lists for your monitoring needs when you schedule work with Radian's Analytical Services Laboratories.

VOLATILE COMPOUNDS***TEST PARAMETERS BY REGULATIONS**

ANALYTE	CWA		RCRA				SUPERFUND	
	NPOES ^a	824 ^b	APPENDIX IX	8240 ^c	SKINNER	TCLP		CLP ^d
						Toxicity	Land ban	
A								
Acetone			✓	✓			✓	✓
Acetonitrile			✓					
Acrolein	✓		✓	✓				
Acrylonitrile	✓		✓	✓				
Allyl chloride			✓					
B								
Benzene	✓	✓	✓	✓	✓	✓		✓
Bromodichloromethane	✓	✓	✓	✓				✓
Bromoform	✓	✓	✓	✓				✓
Bromomethane	✓	✓	✓	✓ ^e				✓
Butyl Alcohol							✓	
C								
Carbon disulfide			✓	✓	✓		✓	✓
Carbon tetrachloride	✓	✓	✓	✓		✓	✓	✓

*This list of compounds, which is a comparison of lists and methods as performed at Radian, is current as of publication date. It should not be used as a substitute for consulting the most recent issue of 40 CFR or SW846 methods for any changes.

^a40 CFR, Pt. 122, Appendix D

^b40 CFR, Pt. 136, Appendix A

^cSW-846, 3rd Edition

^dCLP SOW 7/88

^eListed as methyl bromide

(cont.)

VOLATILE COMPOUNDS (cont.)

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA					SUPERFUND
	NPDES	624	APPENDIX IX	6240	SKINNER	TCLP		CLP
						Toxicity	Land ban	
Chlorobenzene	✓	✓	✓	✓	✓	✓	✓	✓
Chlorodibromomethane	✓ ¹	✓ ¹	✓ ¹	✓				✓
Chloroethane	✓	✓	✓	✓				✓
2-Chloroethylvinyl ether	✓	✓		✓				
Chloroform	✓	✓	✓	✓	✓	✓		✓
Chloromethane	✓	✓	✓	✓				✓
Chloropropene			✓					
D								
1,2-Dichlorobenzene	✓	✓						
1,3-Dichlorobenzene	✓	✓						
1,4-Dichlorobenzene	✓	✓						
1,2-Dibromo-3-chloropropane			✓					
Dibromomethane			✓ ²	✓				
1,2-Dibromoethane			✓		✓ ³			
1,4-Dichloro-2-butane				✓				
<i>trans</i> -1,4-Dichloro-2-butene			✓	✓				
Dichlorodifluoromethane			✓	✓				
1,1-Dichloroethane	✓	✓	✓	✓				✓
1,2-Dichloroethane	✓	✓	✓	✓	✓	✓		✓
1,1-Dichloroethylene	✓	✓	✓	✓		✓		✓
<i>trans</i> -1,2-dichloroethylene	✓	✓	✓	✓				✓
1,2-Dichloropropane	✓	✓	✓	✓				✓
<i>cis</i> -1,3-Dichloropropene	✓	✓	✓	✓				✓
<i>trans</i> -1,3-Dichloropropene	✓	✓	✓	✓				✓
1,4-Dioxane			✓		✓			
E								
Ethanol				✓				
Ethyl acetate							✓	
Ethyl benzene	✓	✓	✓	✓	✓		✓	✓
Ethyl ether							✓	
Ethyl methacrylate			✓	✓				
H								
2-Hexanone			✓	✓				✓

¹Listed as dibromochloromethane

²Listed as methylene dibromide

³Listed as ethylene dibromide

⁴Listed as methyl iodide

(cont. ▶)

VOLATILE COMPOUNDS (cont.)
TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA				SUPERFUND	
	NPDES	824	APPENDIX IX	8240	SKINNER	TCLP		CLP
						Toxicity	Land ban	
I								
Iodomethane			✓	✓				
Isobutanol							✓	
M								
Methacrylonitrile			✓					
Methanol							✓	
Methylene chloride	✓	✓	✓	✓			✓	✓
Methyl ethyl ketone			✓	✓	✓	✓	✓	✓
Methyl isobutyl ketone			✓ ^a	✓ ^a			✓	✓
Methyl methacrylate			✓					
P								
Propionitrile			✓					
S								
Styrene			✓	✓	✓			✓
T								
1,1,1,2-Tetrachloroethane			✓					
1,1,2,2-Tetrachloroethane	✓	✓	✓	✓				✓
Tetrachloroethylene	✓	✓	✓	✓		✓	✓	✓
Toluene	✓	✓	✓	✓	✓		✓	✓
1,1,1-Trichloroethane	✓	✓	✓	✓			✓	✓
1,1,2-Trichloroethane	✓	✓	✓	✓				✓
Trichloroethylene	✓	✓	✓	✓		✓	✓	✓
Trichlorofluoromethane		✓	✓	✓			✓	
1,2,3-Trichloropropane			✓	✓				
1,1,2-Trichloro-2,2,1-trifluoroethane							✓	
V								
Vinyl acetate			✓	✓				✓
Vinyl chloride	✓	✓	✓	✓		✓		✓
X								
Xylenes			✓	✓	✓		✓	✓

^a Listed as 2-butanone

^b Listed as 4-methyl-2-pentanone

SEMIVOLATILE COMPOUNDS*

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA				SUPERFUND	
	NPDES	625 ¹	APPENDIX IX	8270 ²	SKINNER	TCLP		CLP
						Toxicity	Land ban	
A								
Acenaphthene	✓	✓	✓	✓				✓
Acenaphthylene	✓	✓	✓	✓				✓
Acetophenone			✓	✓				
2-Acetylaminoanthracene			✓					
4-Aminobiphenyl			✓	✓				
Aniline			✓	✓				
Anthracene	✓	✓	✓	✓	✓			✓
Aramite			✓					
B								
Benzenethiol					✓			
Benzidine	✓			✓				
Benzoic acid				✓				✓
Benzofluoranthene	✓	✓	✓	✓	✓			✓
Benzo(b)fluoranthene	✓	✓	✓	✓	✓			✓
Benzo(g,h,i)perylene	✓	✓	✓	✓				✓
Benzofluoranthene	✓	✓	✓	✓	✓			✓
Benzyl alcohol			✓	✓				✓
Bis(2-chloroethoxy)methane	✓	✓	✓	✓				✓
Bis(2-chloroethyl)ether	✓	✓	✓	✓				✓
Bis(2-chloroisopropyl)ether	✓ ⁿ	✓		✓ ^o				✓
Bis(2-ethylhexyl)phthalate	✓	✓	✓	✓	✓			✓
4-Bromophenyl phenyl ether	✓	✓	✓	✓				✓
Butyl benzyl phthalate	✓ ^p	✓	✓	✓	✓			✓
C								
4-Chloroaniline			✓ ^q	✓				✓
Chlorobenzilate			✓					
4-Chloro-3-methylphenol	✓ ^r	✓	✓ ^r	✓				✓
1-Chloronaphthane				✓				
2-Chloronaphthane	✓	✓	✓	✓				✓
2-Chlorophenol	✓	✓	✓	✓				✓
4-Chlorophenyl phenyl ether	✓	✓	✓	✓				✓

*This list of compounds, which is a comparison of lists and methods as performed at Radian, is current as of publication date. It should not be used as a substitute for consulting the most recent issue of 40 CFR or methods for any changes. Chromatographicable pesticides are excluded from this list.

40 CFR, Pt. 136, Appendix A.

¹SW-846, 3rd Edition

²Listed as 2,2'-oxybis(1-chloropropane)

³Listed as bis(2-chloro-1-methylethyl)ether

⁴Listed as benzyl butyl phthalate

⁵Listed as p-chloroaniline

⁶Listed as p-chloro-m-cresol

(cont)

SEMIVOLATILE COMPOUNDS (cont.)

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA					SUPERFUND
	NPDES	825	APPENDIX IX	8270	SKINNER	TCLP		CLP ^d
						Toxicity	Land ban	
Chrysene	✓	✓	✓	✓	✓			✓
Cresol						✓		
Cyclohexanone							✓	
D								
Diallate			✓					
Dibenzot(a,h)acridine					✓			
Dibenzot(a,j)acridine				✓				
Dibenzot(a,h)anthracene	✓	✓	✓	✓	✓			✓
Dibenzofurans tetrachloro pentachloro hexachloro			✓	✓			✓	✓
1,2-Dibromo-3-chloropropane			✓					
Di-n-butylphthalate	✓	✓	✓	✓	✓			✓
1,2-Dichlorobenzene	✓	✓	✓	✓	✓		✓	✓
1,3-Dichlorobenzene	✓	✓	✓	✓	✓			✓
1,4-Dichlorobenzene	✓	✓	✓	✓	✓	✓		✓
3,3'-Dichlorobenzidine	✓	✓	✓	✓				✓
2,4-Dichlorophenol	✓	✓	✓	✓				✓
2,6-Dichlorophenol			✓	✓				✓
Diethyl phthalate	✓	✓	✓	✓	✓			✓
p-Dimethylaminoazobenzene			✓	✓				
7,12-Dimethylbenz(a)anthracene			✓	✓	✓			
3,3'-Dimethylbenzidine			✓					
α,α-Dimethylphenethylamine			✓	✓				
2,4-Dimethylphenol	✓	✓	✓	✓	✓			✓
Dimethyl phthalate	✓	✓	✓	✓	✓			✓
m-Dinitrobenzene			✓					
4,6-Dinitro-2-methylphenol	✓	✓	✓ ⁵	✓ ⁵				✓
2,4-Dinitrophenol	✓	✓	✓	✓	✓			✓
2,4-Dinitrotoluene	✓	✓	✓	✓		✓		✓
2,6-Dinitrotoluene	✓	✓	✓	✓				✓
Di-n-octyl phthalate	✓	✓	✓	✓	✓			✓
Dioxins tetrachlorodibenzo-p- pentachlorodibenzo-p- hexachlorodibenzo-p-							✓	
Diphenylamine			✓	✓				
1,2-Diphenylhydrazine	✓			✓				

^a Listed as 4,6-dinitro-o-cresol

^d Dioxin Wastes (F020, 021, 022, 023, 026, 027, 029)

(cont. ►)

SEMIVOLATILE COMPOUNDS (cont.)

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA					SUPERFUND
	NPDOS	825	APPENDIX IX	8270	SKINNER	TCLP		CLP
						Toxicity	Land han	
E Ethyl methanesulfonate			✓	✓				
F Fluoranthene	✓	✓	✓	✓	✓			✓
Fluorene	✓	✓	✓	✓				✓
H Hexachlorobenzene	✓	✓	✓	✓		✓		✓
Hexachloro-1,3-butadiene	✓	✓	✓	✓		✓		✓
Hexachlorocyclopentadiene	✓		✓	✓				✓
Hexachloroethane	✓	✓	✓	✓		✓		✓
Hexachlorophene			✓					
Hexachloropropene			✓					
2-Hexanone			✓					
I Indene					✓			
Indeno[1,2,3-cd]pyrene	✓	✓	✓	✓				✓
Isodrin			✓					
Isophorone	✓	✓	✓	✓				✓
Isosafrole			✓					
M Methapyrene			✓					
3-Methylchoianthrene			✓	✓				
Methylchrysene					✓			
Methyl methanesulfonate			✓	✓				
1-Methylnaphthalene					✓			
2-Methylnaphthalene			✓	✓				✓
2-Methylphenol			✓ ^t	✓	✓	✓ ^t	✓ ^t	✓
3-Methylphenol			✓ ^t		✓	✓ ^t	✓ ^t	
4-Methylphenol			✓ ^t	✓	✓	✓ ^t	✓ ^t	✓
N Naphthalene	✓	✓	✓	✓	✓			✓
1,4-Naphthoquinone			✓					

^t Listed as o,m,p cresols

^v Listed as o,m,p nitroanilines

^v Listed as o nitrophenol

(cont. ➡)

SEMIVOLATILE COMPOUNDS (cont.)

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA					SUPERFUND
	NPDES	625	APPENDIX IX	8270	SKINNER	TCLP		CLP
						Toxicity	Land ban	
1-Naphthylamine			✓	✓				
2-Naphthylamine			✓	✓				
2-Nitroaniline			✓ ¹	✓				✓
3-Nitroaniline			✓ ^u	✓				✓
4-Nitroaniline			✓ ^u	✓				✓
Nitrobenzene	✓	✓	✓	✓		✓	✓	✓
5-Nitro-o-toluidine			✓					
2-Nitrophenol	✓	✓	✓ ^v	✓				✓
4-Nitrophenol	✓	✓	✓ ^w	✓	✓			✓
4-Nitroquinoline-1-oxide			✓					
N-Nitrosodiethylamine			✓					
N-Nitrosodimethylamine	✓		✓	✓				
N-Nitroso-di-n-butylamine			✓	✓				
N-Nitrosodi-n-propylamine	✓	✓	✓	✓				✓
N-Nitrosopiperidine			✓	✓				
N-Nitrosodiphenylamine	✓		✓	✓				✓
N-Nitrosomethylethylamine			✓					
N-Nitrosomorpholine			✓					
N-Nitrosopyrrolidine			✓					
P								
Pentachlorobenzene			✓	✓				
Pentachloroethane			✓					
Pentachloronitrobenzene			✓	✓				
Pentachlorophenol	✓	✓	✓	✓		✓	✓	✓
Phenacetin			✓	✓				
Phenanthrene	✓	✓	✓	✓	✓			✓
Phenol	✓	✓	✓	✓	✓			✓
p-Phenylenediamine			✓					
2-Picoline			✓	✓				
Polychlorinated dibenzofurans			✓ ^x					
Polychlorinated dioxins			✓ ^x					
Pronamide			✓	✓				
Pyrene	✓	✓	✓	✓	✓			✓
Pyridine			✓		✓	✓	✓	
Q								
Quinoline					✓			

^a Listed as p-nitrophenol

^x Listed as polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans by Method SW8280, SW-846, 1st Edition

^w Dioxin Wastes (F020, 021, 022, 023, 026, 027, 028)

(cont. ►)

SEMIVOLATILE COMPOUNDS (cont.)

TEST PARAMETERS BY REGULATIONS

ANALYTE	CWA		RCRA				SUPERFUND	
	NPDES ¹	825	APPENDIX IX	8270	SKINNER	TCLP		CLP
						Toxicity	Land ban	
S Safrole			✓					
T 1,2,4,5-Tetrachlorobenzene			✓	✓				
2,3,4,6-Tetrachlorophenol			✓	✓				
o-Toluidine			✓					
1,2,4-Trichlorobenzene	✓	✓	✓	✓				✓
2,4,5-Trichlorophenol			✓	✓		✓		✓
2,4,6-Trichlorophenol	✓	✓	✓	✓		✓		✓
sym-Trinitrobenzene			✓					
0,0,0 Triethylphosphorotriate			✓					

¹ Dioxin Wastes (F020, 021, 022, 023, 026, 027, 029)

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