DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

19 SEP 1994

Christopher S. Long, Colonel, USAF
Commander, 27th Support Group
100 S DL Ingram Blvd Suite 200
Cannon AFB NM 88103-5217

Mr. Tom Tatkin
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
1190 St Francis Drive
PO Box 26110
Santa Fe NM 87502

OCT 1994
RECEIVED
HAZARDOUS WASTE
PROGRAM

Dear Mr. Tatkin

Attachment 1 is the "Analytical Results for Soils at the Open Burn/Open Detonation Thermal Treatment Facility" at Melrose Air Force Range. Sampling was conducted by the US Geological Survey (USGS). A cross reference of USGS sample numbers and sample locations is located at Attachment 2.

Included in this package (Attachment 3) for your convenience, is a copy of the "Baseline Characterization Sampling and Analysis Plan" written by Cannon AFB and submitted with the permit revisions on 22 Feb 94.

Cannon AFB thanks you again for the superior support you have provided as we continue through the permit process. We have truly set the example for Air Combat Command in cooperation.

If you have any questions, please contact Capt Greg Walters of my Environmental Flight at (505) 784-6022.

Sincerely

Christopher S. Long

CHRISTOPHER S. LONG, Colonel, USAF
Commander, 27th Support Group

Attachments:
1. USGS Analytical Results
2. Sample Cross-reference
3. Sampling Plan

USGS MAP
SAMPLE LOCATION
CROSS-REFERNCE

USGS SAMPLE NO.	REF NUMBER TO MAP	DEPTH	REMARKS
OB/OD0306	3	15	Added Background Sample
OB/OD0403	4	10	
OB/OD0404	4	15	
OB/OD0503	5	10	MS/MSD
OB/OB0505	5	10	Duplicate
OB/OD0506	5	15	
OB/OD1501	-	0	Equipment Blank
OB/OD1502	15	0-1	
OB/OD1503	15	5	
OB/OD1504	15	10	
OB/OD1505	15	15	
OB/OD1601	16	0-1	
OB/OD1602	16	5	
OB/OD1603	16	10	
OB/OD1604	16	15	
OB/OD1701	17	0-1	
OB/OD1702	17	5	
OB/OS1703	17	5	Duplicate
OB/OD1704	17	10	
OB/OD1705	17	15	
OB/OD1801	18	0-1	
OB/OD1802	18	5	
OB/OD1803	-	0	Equipment Blank
OB/OD1804	18	10	
OB/OD1805	18	15	

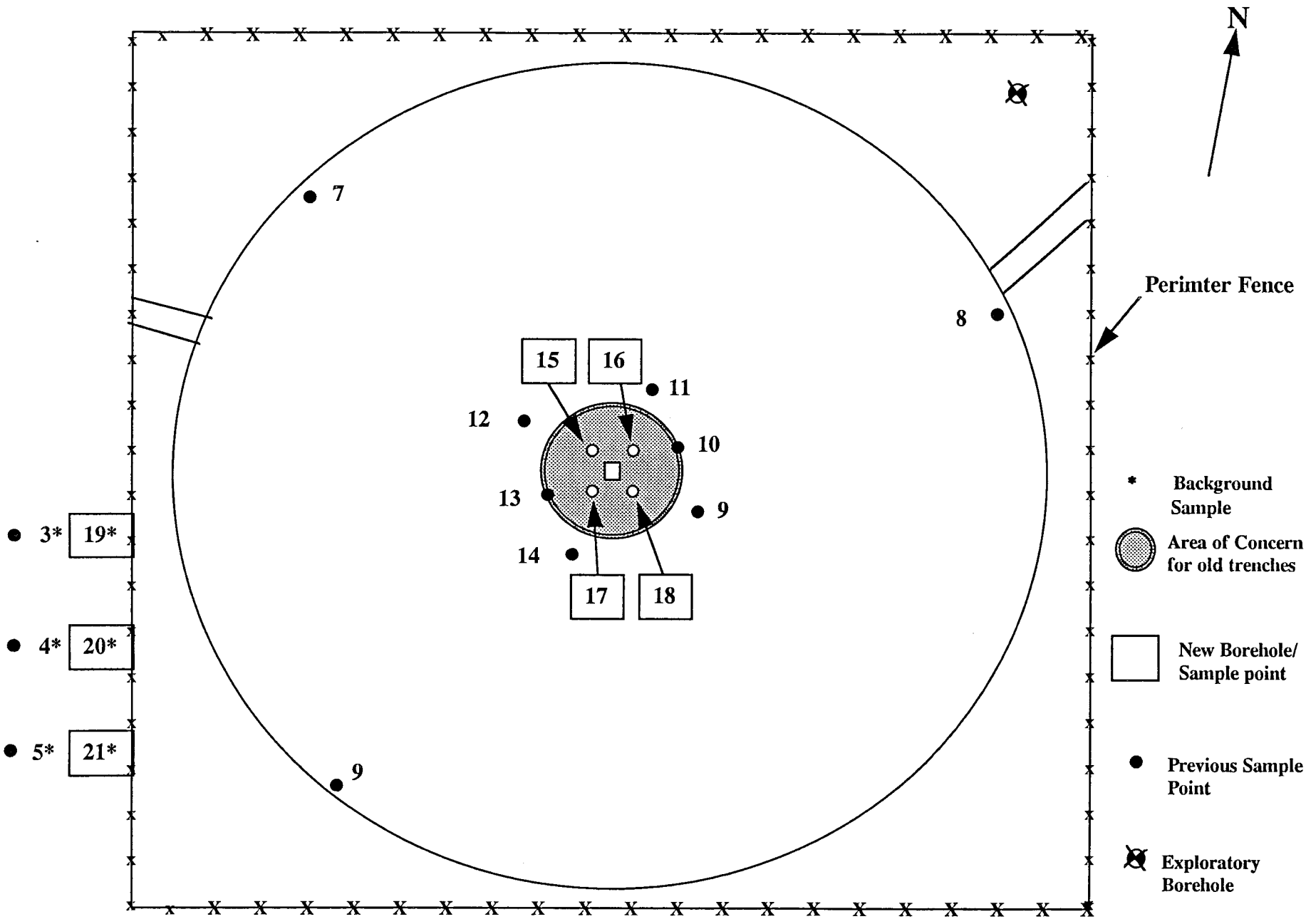

Figure 1 Baseline Characterization Sample Locations

MELROSE AIR FORCE RANGE

BASELINE CHARACTERIZATION SAMPLING AND ANALYSIS PLAN

PREPARED BY:

27 CES/CEV
CANNON AFB, NM
22 Feb 94

1. INTRODUCTION

The purpose of this sampling and analysis plan (SAP) is to provide baseline site characterization data for the Melrose Air Force Range (MAFR) Open Detonation (OD) Unit to compliment the data gathered from previous studies. The baseline data will be used to support the Resource Conservation and Recovery Act (RCRA) Subpart X Permit Application for MAFR, an ancillary part of Cannon Air Force Base (CAFB), New Mexico. Environmental baseline data is necessary to determine if previous demilitarization activities at the OD area have affected ambient soils and to identify contaminated areas for further study and/or remedial action.

This plan explains the rationale for how and why samples are collected and explains the spatial relationships for sample collection. This plan is based upon historical knowledge of MAFR operations, United States Air Force (USAF) OD operations, existing environmental conditions, previous studies conducted to determine contamination of OD units ("Bang Box" studies by Johnson, 1991 & 1993, and USGS Baseline Study 1993). Where applicable, the procedures and quality assurance/quality control (QA/QC) techniques in EPA's November 1986 *Test Methods for Evaluating Solid Waste* have been used to prepare this SAP.

2. SITE DESCRIPTION

The OD unit is within the boundaries of MAFR in Roosevelt County, New Mexico, approximately 25 miles southwest of Cannon AFB. The location of MAFR and the exact location of the OD unit are shown in Section B of the Part B permit application. The area within which the OD unit is located consists of a 700-ft circular area which is regularly cleared of vegetation and debris. Encircling this cleared area is an earthen berm used to prevent run-on and run-off of storm water. The environmental conditions, including geology, hydrogeology, topography and drainage features, and climate at MAFR are described in Section B of the Part B RCRA permit application.

3. SAMPLING APPROACH AND RATIONALE

3.1 RATIONALE

Melrose AFR has never been used for the research and development of nuclear, chemical warfare, or other exotic warfare type weapons. The only munitions delivered or disposed of at MAFR have been conventional live and training munitions. Therefore, the emphasis of the sampling and analysis should search only for those constituents present in these wastes. This philosophy supports the analytical methods described in Section 3.3 and Table 4. Any further investigations should be addressed during closure of the unit and only if appropriate at that time. This is also supported by studies conducted on OD units to determine contamination and air toxic release often referred to as the "Bang Box" studies (Johnson 1991 & 1993).

Previous OD operations were conducted using 10-12 feet wide trenches dug to a depth of 6-8 feet. Munitions were then detonated in these trenches. After the detonation trench was cleared of scrap metal, the trenches were backfilled. Earlier baseline studies adequately addressed surface soil contamination, but did not properly address the potential contamination located at a depth consistent with old trenches. Research information indicates all of the previous OD trenches were constructed within 50 feet of the center of the OD unit. Therefore, the primary focus of this study is to search for contamination at a depth of 6-15 feet within 50 feet of the center of the OD unit.

The number of boreholes is based upon the Remedial Action Cost Engineering and Requirements (RACER) System calculations using the site

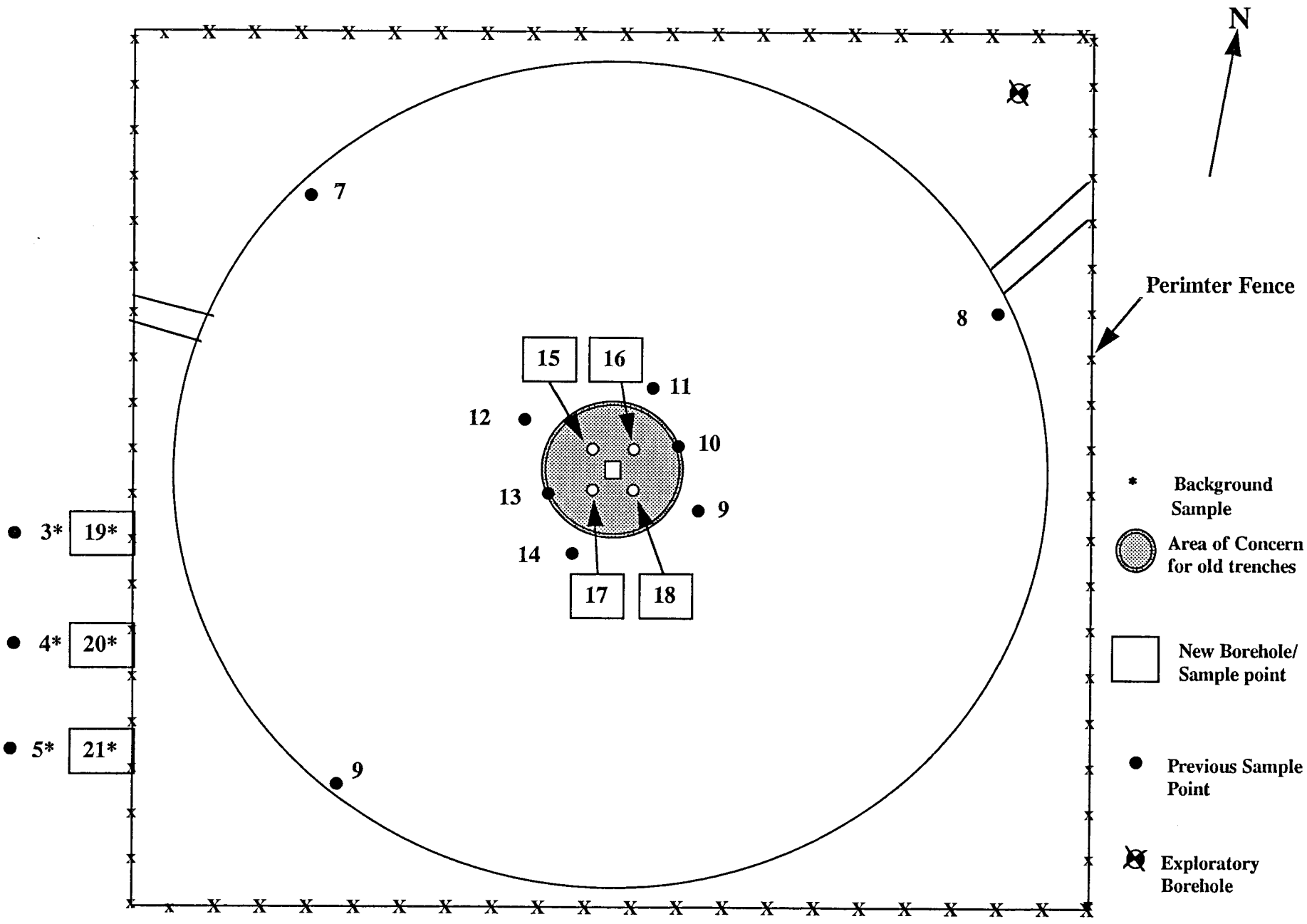

Figure 1 Baseline Characterization Sample Locations

Table 1
VERTICAL SAMPLE LOCATIONS

BOREHOLE NUMBER	SAMPLE NUMBER	DEPTH	CORRESPONDING USGS NUMBER	REMARKS
1	1	0-1'	OB/OD0101	
1	2	5'	OB/OD0102	
1	3	10'	OB/OD0103	
2		0-1'	OB/OD0201	
2		5'	OB/OD0202	
2		5'	OB/OD0203	
2		10'	OB/OD0204	
3^		0-1'	OB/OD0301	Previous Background Sample
3^		5'	OB/OD0302	Previous Background Sample
3^		10'	OBOD0303	Previous Background Sample
4^		0-1'	OB/OD0401	Previous Background Sample
4^		5'	OB/OD0402	Previous Background Sample
5^		0-1'	OB/OD0501	Previous Background Sample
5^		5'	OB/OD0502	Previous Background Sample
6		0-1'	OB/OD0601	
6		5'	OB/OD0602	
7		0-1'	OB/OD0701	
7		5'	OB/OD0702	
8		0-1'	OB/OD0801	
8		0-1'	OB/OD0802	
8		5'	OB/OD0803	
9		0-1'	OB/OD0901	
9		5'	OB/OD0902	
10		0-1'	OB/OD1001	
10		5'	OB/OD1002	
11		0-1'	OB/OD1101	
11		5'	OB/OD1102	
12		0-1'	OB/OD1201	
12		5'	OB/OD1202	
13		0-1'	OB/OD1301	
13		5'	OB/OD1302	
14		0-1'	OB/OD1401	
14		5'	OB/OD1402	
15*		0-1'		
15*		5'		
15*		10'		
15*		15'		
16*		0-1'		
16*		5'		
16*		10'		
16*		15'		
17*		0-1'		
17*		5'		
17*		10'		
17*		15'		
18*		0-1'		
18*		5'		
18*		10'		
18*		15'		
19*		15'		Additional Background Sample
20*		10'		Additional Background Sample
20*		15'		Additional Background Sample
21*		10'		Additional Background Sample
21*		15'		Additional Background Sample

^Denotes Previous Background Sample
*Denotes Sample from this Round of Sampling

specific conditions and potential contaminants. RACER is the standard for USAF and US Army Corps of Engineers in determining site characterization parameters. A description of the baseline RACER parameters used to establish this study are contained in Appendix 1 to this plan. The RACER calculations were based upon investigating the entire fenced area (approximately 12 acres) of the OD facility. The RACER estimate requirements to characterize the entire area of the OD facility were 5 subsurface soil boreholes, and 4 surface soil samples. The primary focus of this additional baseline characterization is to search the old trench area (only the 50 radius circle around center of OD unit). This is the basis for downward adjustment of sample numbers from 5 boreholes to 4 boreholes.

Four additional subsurface borings (Boreholes #15-#18) are to be studied under this SAP. All of the borings are located within 50 feet of the center of the OD unit. Samples will be collected at 0, 5, 10, and 15 ft intervals. Additional background samples (Borehole #19-#21) will be taken near the previous background locations. Background samples will collected at depths to compliment previous samples (i.e. deeper than in the previous study). Background sampling will be conducted at a distance sufficiently separate from previous OD activities such that contamination at the sampling locations will not have occurred. Table 1 summarizes vertical locations of all samples. Boring locations for the additional borings are indicated by a box in Figure 1.

3.2 INTEGRATION WITH PREVIOUS STUDIES

Vertical and horizontal sample locations from previous baseline surveys are located in Figure 1 with analytical results summarized in Tables 2 and 3. Upon review of the 1993 USGS Baseline Study, NMED found the study did not properly address potential contamination associated with the old OD trenches. Therefore, this additional baseline study will be used to compliment existing data.

The previous study consisted of 33 samples, of which, 7 were for background. These samples were analyzed for RCRA metals (EPA Method 6010) and explosives (EPA Method 8330). The samples were located as depicted in Figure 1 (horizontal locations) and Table 1 (vertical locations. This sampling plan will compliment the previous study by further examining for contamination associated with old OD trenches and by providing additional sample locations, additional analytes, better QA/QC, and additional background sampling.

Together, the proposed and previous studies will allow a complete evaluation of existing contamination at the OD facility. Should any new information/contamination be detected in this episode of baseline characterization, additional sampling may be warranted.

Table 2
Previous Study Sample Results
METALS

BOREHOLE #	DEPTH OF SAMPLE	Antimony	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenu	NICKEL	Potasium	Selenium	Solver	Sodium	Tallium	Vanadium	Zinc
1	0-1'	ND	10300	ND	113	0.6	ND	41100	8.3	ND	7.4	8790	ND	2440	149	ND	9.5	1920	ND	ND	ND	ND	21.4	20.9
1	5'	ND	5330	ND	90	0.34	ND	37900	5.2	ND	ND	5680	ND	2600	127	ND	5.7	1050	ND	ND	ND	ND	17.1	12.8
1	10	ND	6970	ND	418	0.47	ND	119000	5	ND	4.6	6300	ND	3210	104	ND	21.8	1510	ND	ND	ND	ND	20.5	16
2	0-1'	ND	9620	ND	127	0.56	ND	48300	7.5	ND	6.7	8390	ND	2380	154	ND	9.4	1810	ND	ND	ND	ND	20.4	20.6
2	5'	ND	7420	ND	120	0.54	ND	47600	6.3	ND	7.3	7010	ND	2070	142	ND	8.7	1460	ND	ND	ND	ND	19.2	17.9
2	5'	ND	4280	ND	561	ND	ND	115000	ND	ND	4.1	4770	ND	2290	749	ND	ND	ND	ND	ND	ND	ND	18.3	11.9
2	10'	ND	5320	ND	415	ND	ND	220000	ND	ND	ND	5060	ND	3060	193	ND	24	ND	ND	ND	ND	ND	17.6	14.3
3	0-1'	ND	5830	ND	91.2	0.49	ND	8700	6.2	ND	5.8	6690	ND	1870	214	ND	7.9	1590	ND	ND	ND	ND	13.1	18.9
3	5'	ND	5420	ND	48.2	0.35	ND	48500	5.1	ND	3.3	5940	ND	2670	131	ND	6.6	1190	ND	ND	ND	ND	16.2	13.2
3	10'	ND	8960	ND	105	0.55	ND	67300	7.5	4.1	6.1	8570	ND	4530	201	ND	9.4	2020	ND	ND	ND	ND	26.6	22.3
4	0-1'	ND	9610	ND	98.8	0.64	ND	4110	8.7	4.2	8.4	8430	ND	2150	229	ND	10.4	2130	ND	ND	ND	ND	17.3	21.8
4	5'	ND	7080	ND	112	0.47	ND	57300	5.7	ND	6.3	6600	ND	3450	185	ND	8	1520	ND	ND	ND	ND	27.4	17.9
5	0-1'	ND	9550	ND	94.7	0.62	ND	3030	9.1	4.3	8.4	8650	ND	1870	225	ND	9.6	1920	ND	ND	ND	ND	18.2	20
5	5'	ND	5080	ND	176	0.35	ND	56700	4.2	ND	4.4	4710	ND	2630	143	ND	7.1	1100	ND	ND	ND	ND	16.1	13
6	0-1'	ND	10900	ND	119	0.69	ND	7830	10.1	5.1	8.5	9770	ND	2350	249	ND	11.4	2230	ND	ND	ND	ND	20.5	23.5
6	5'	ND	7160	ND	127	ND	ND	97100	4.9	ND	4.5	5900	ND	3140	122	ND	8	1640	ND	ND	ND	ND	18.6	31.1
7	0-1'	ND	9150	ND	110	0.6	ND	33600	7.3	4.3	8.5	7070	ND	1990	156	ND	9.8	1640	ND	ND	ND	ND	20.1	18.3
7	5'	ND	10100	ND	146	0.67	ND	46500	7.8	4.5	9	8100	ND	2560	193	ND	11.2	2090	ND	ND	ND	ND	24.2	21.5
8	0-1'	ND	9800	ND	117	0.62	ND	29100	7.8	4.1	8.7	7900	ND	2130	171	ND	9.8	1720	ND	ND	ND	ND	20.9	23.7
8	0-1'	ND	5760	ND	211	0.39	ND	48000	4.9	ND	4.5	5050	ND	2680	124	ND	6.4	1300	ND	ND	ND	ND	15.3	13.9
8	5'	ND	6650	ND	73.2	0.45	ND	51000	5.3	ND	4.7	5700	ND	3230	156	ND	7.4	1400	ND	ND	ND	ND	22.5	16.1
9	0-1'	ND	8170	ND	110	0.57	ND	25200	7.1	4.1	9.5	7160	ND	1980	175	ND	8.9	1740	ND	ND	ND	ND	17.2	20.8
9	5'	ND	5320	ND	142	0.38	ND	51300	4.1	ND	4.9	4420	ND	2190	143	ND	6.7	1230	ND	ND	ND	ND	14.6	13.2
10	0-1'	ND	5680	ND	176	0.46	ND	57500	5	ND	6.6	5810	ND	1960	127	ND	7.1	1110	ND	ND	ND	ND	16.6	14.6
10	5'	ND	4520	ND	66.5	0.37	ND	77700	4	ND	4.1	4860	ND	2510	107	ND	5.8	1010	ND	ND	ND	ND	20.6	11.8
11	0-1'	ND	7460	ND	107	0.58	ND	16700	7.9	4.3	8.8	8210	ND	1830	194	ND	9	1600	ND	ND	ND	ND	18.8	19
11	5'	ND	3580	ND	146	0.32	ND	52300	ND	ND	3.1	5210	ND	1790	158	ND	5	663	ND	ND	ND	ND	21.3	20.6
12	0-1'	ND	3300	ND	49.5	0.27	ND	11200	4.2	ND	4.6	3670	ND	855	84.8	ND	5.3	731	ND	ND	ND	ND	8.7	34.5
12	5'	ND	4680	ND	513	0.43	ND	132000	ND	ND	4.3	4660	ND	2320	201	ND	ND	ND	ND	3.1	ND	ND	17.	12.7
13	0-1'	ND	5000	ND	141	0.39	ND	41100	5.1	ND	6.7	5940	ND	1530	131	ND	6.4	995	ND	ND	ND	ND	16.4	15.5
13	5'	ND	4200	ND	155	0.35	ND	77000	ND	4	5	4590	ND	2040	365	ND	5.9	732	ND	ND	ND	ND	20.1	12
14	0-1'	ND	6580	ND	120	0.52	ND	23800	7.2	ND	8.1	7070	ND	1860	177	ND	7.8	1530	ND	ND	ND	ND	16.8	18.9
14	5'	ND	5720	ND	63.9	0.44	ND	101000	4.5	ND	4.1	5810	ND	3030	117	ND	ND	1200	ND	ND	ND	ND	23.5	15

Table 3
Previous Study Sampling Results
EXPLOSIVE COMPOUNDS
(EPA 8330)

BOREHOLE #	DEPTH OF SAMPLE	HMX	RDX	1,3,5 TRINITROBENZENE	1,3-DINITROBENZENE	NITROBENZENE	TETRYL	4,6-DINITROBENZENE	2,4,6-TRINITROTOLUENE	2,6-DINITROTOLUENE	2,4-DINITROTOLUENE
1	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	10'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	10'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	0-1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 4
Baseline Sampling Analytes

COMPOUND GROUP	COMPOUND	EPA METHOD
METALS		6010
	Antimony	6010
	Aluminum	6010
	Arsenic	6010
	Barium	6010
	Beryllium	6010
	Cadmium	6010
	Calcium	6010
	Chromium	6010
	Cobalt	6010
	Copper	6010
	Iron	6010
	Lead	6010
	Magnesium	6010
	Manganese	6010
	Molybdenum	6010
	Nickel	6010
	Potassium	6010
	Selenium	6010
	Silver	6010
	Sodium	6010
	Thallium	6010
	Vanadium	6010
	Zinc	6010
	Mercury	7471
Gross Alpha and Beta		9310
Sulfides		9031
SemiVOCs		8260/8270
Soil Moisture		ASTM D 2216
Explosive Compounds		8330
	HMX	8330
	RDX	8330
	1,3,5-Trinitrobenzene	8330
	1,3,5-Dinitrobenzene	8330
	Nitrobenzene	8330
	Tetryl	8330
	2,4,6-Trinitrotoluene	8330
	2,6-Dinitrotoluene	8330
	2,4-Dinitrontoluene	8330
	2-Nitrotoluene	8330
	3-Nitrotoluene	8330
	4-Nitrotoluene	8330

3.3 ANALYSIS RATIONALE

In previous studies, samples have been analyzed for Metals (EPA Method 6010) and Explosives (EPA Method 8330). This was sufficient to characterize surface soils because all volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) would not be present. The explosive episode would vaporize all VOCs The potential for SVOCs to be present in the soil after nearly one year since the last detonation episode is low. Thermal destruction and natural degradation processes are two reasons SVOCs would not be present after one year. However, since the basis for this study is to characterize the old OD trenches, SVOCs will be added to the analyte listing (See Table 1).

Previously NMED has requested an analysis of the entire list of compounds in HWMR Appendix VIII type of analysis spectrum. Many of these constituents can be ruled out because of the process knowledge and munitions involved in detonation. As discussed above we can rule out VOCs because they become vaporized during the detonation episode and the Bang Box Study (Johnson 1991 and 1993). No Polychlorinated Biphenols are present in the munitions treated at the range, nor have any waste oils or fluids potentially containing PCBs been used. Pesticides and herbicides are not treated at the OD unit. Although Gross Alpha and Beta measurements are on the list of analytes, no munitions or weapons associated with nuclear compound have ever been treated or utilized on Melrose AFR.

Based upon this rationale, samples will be analyzed for a modified Appendix VIII list. These analytes are listed in Table 4

SECTION 4: SAMPLING PROCEDURES AND METHODOLOGY

4.1 SAMPLE LOCATION:

Sample locations will be those depicted with squares in Figure 1. The vertical extent of sampling, ranging from the upper 6 inches to a depth of 15 feet, is presented for each sample location in Table 2. These sample locations should sufficiently identify any contamination in subsurface soils.

4.2 QUALITY CONTROL SAMPLES:

This section addresses requirements for field QC samples. Field QC is monitored by a variety of QC samples taken with sufficient frequency to verify the quality of field samples. Field rinsates will be collected during each sampling

event to ensure decontamination procedures in the field are adequate to prevent carryover of contamination from one sampling area to the next. Field rinsate blanks shall be collected by rinsing cleaned equipment with American Society for Testing and Materials (ASTM) Type II water and collecting the runoff as a sample. Field duplicates (samples taken at the same sampling location) will be collected during each sampling event. These duplicates are used to ensure that the sampling procedure is reproducible and that the sample is representative of the location. One duplicate sample will be taken for every ten baseline samples collected. For each mobilization of sampling (daily) one equipment blank sample will be collected.

4.4 SAMPLING PROCEDURES

Required sampling equipment includes a soil auger for excavation, 100 - 500-mL glass vials, plastic caps, small stainless steel or Teflon-lined trowel, small stainless steel or Teflon-lined spatulas/scoops/spoons, and gummed labels for sample identification. Sampling procedures will be performed in accordance with ASTM D 1452, "Standard Practice for Soil Investigation and Sampling by Auger Borings," where applicable. Sampling procedures for the three sampling areas are as follows:

4.5 CONTAMINATION CONTROL

Sampling tools and equipment will be protected from contamination sources before sampling and decontaminated before and between sampling points. Sample containers should also be protected from contamination sources. Sampling personnel will wear chemical-resistant gloves when handling the sampling equipment and samples. Gloves will be decontaminated or disposed of between samples.

To prevent cross contamination, sampling equipment will be subject to decontamination procedures following sample collection at each location. Sampling equipment will be decontaminated in a decontamination zone by being:

- brush-scrubbed in tap water and Liquinox detergent wash in a tub to remove any soil from the equipment;
- rinsed in tap water in a separate tub;
- rinsed in deionized water;
- rinsed in isopropanol rinse;
- air-dried in an area upwind of the decontamination process; and
- stored for future sampling after being wrapped in aluminum foil (shiny side out).

4.6 HEALTH AND SAFETY PROCEDURES

Personnel performing sampling activities will utilize personal protective equipment such as rubber gloves, boots, aprons, and eye protection, if deemed necessary. Personnel will not be permitted to conduct any sampling until they have been cleared by the range contractor and EOD personnel. Sampling personnel will be properly trained in hazardous waste sampling, and will have appropriate medical monitoring and certification. Sampling personnel will also be briefed by Cannon AFB on the hazards of sampling explosive compounds.

5. SAMPLING HANDLING AND CHAIN OF CUSTODY

Chain Of Custody (COC) procedures will be followed to track possession of the samples from the time the samples are collected until the analytical data from the samples are received and recorded. For all soil samples, procedures will begin once sampling is complete. A sample will be considered under custody if it is:

- in the possession of the sampling team;
- in view of the sampling team; or
- transferred to a secure area.

An area is considered secure only when it is locked and access is controlled. The sampling team leader is responsible for custody of the collected samples in the field until they have been properly transferred to the shipping coordinator, who is responsible for sample custody until the samples are properly packaged, documented, and released to a courier or directly to the analytical laboratory. A COC record such as the one shown in Fig. 2 will be used for the sampling effort.

5.1 SAMPLE CONTAINER AND PRESERVATION REQUIREMENTS

The following arrangements will be made ahead of time for the selected laboratory to conform to the following special requirements:

- Method 6010 Elemental Metals: Refrigerate the samples at 4°C until analysis.
- Method 7471 Mercury: Refrigerate the samples at 4°C until analysis.
- Method 8330 Explosive Residues: If soil samples are wet, they should be air dried at room temperature or colder. Refrigerate the samples at 4°C until analysis.
- Method 8260/8270 Semi-Volatile Organic Compounds: Refrigerate the samples at 4°C until analysis.

Table 5 summarizes the container, preservative, and holding time requirements for the samples to be collected.

Table 5.
SUMMARY OF SAMPLE CONTAINER, PRESERVATIVE, AND HOLDING TIME REQUIREMENTS.

SW 846 Method	Analyte	Container	Preservative	Holding time
6010	elemental metals	600-ml wide-mouthed glass or plastic jar	none, cool, 4°C	14 days to extraction 26 months after extraction
7471	mercury	400-ml wide-mouthed glass or plastic jar	none, cool, 4°C	14 days to extraction 28 days after extraction
8330	explosive residues	60-ml wide-mouthed amber glass jar with Teflon-lined cap	none, cool, 4°C	14 days to extraction 40 days after extraction
8260/ 8270	semi-volatile organics	60-ml wide-mouthed amber glass jar with Teflon-lined cap	none, cool, 4°C	14 days to extraction 40 days after extraction

5.2 PACKAGING AND TRANSPORTATION

At the end of each sampling day, samples will be packaged in shipping containers with ice packs. The samples will be carefully packaged so that they will not break during shipping. Each shipping container will be sealed with a custody seal and shipped to the analytical laboratory by an overnight delivery service.

6. DOCUMENTATION OF ACTIVITIES

6.1 SAMPLE CODING

Labels for sample containers will be uniquely coded to identify the individual composite sample's location, the treatment unit, and date. Examples of a sample code is listed below.

· OD1401 - Sample collected from borehole #14 at interval 1 (0-1')

6.2 SAMPLE IDENTIFICATION

The samples collected will be identified by a tag or other means (e.g., tape) along with the following information:

- Collector name,
- Sample code,
- Place of collection (facility and location),
- Date sample taken, and
- Time sample taken.

Any other information deemed necessary will also be added to the tag.

6.3 FIELD LOGBOOKS

Bound, water-resistant field logbooks and waterproof black ink pens will be used to document the methodology, procedures, and events pertaining to sample and data acquisition. The logbooks will be considered formal documents representing a complete and organized record of all field activities. The entries will include, but not be limited to the following:

- personnel present;
- name of sampler(s)
- date and time of every recording;
- work location;
- description of work and treatment process;
- purpose of sampling;
- environmental conditions (previous 24 hr and present weather conditions, amount and date of last precipitation, and any other conditions or activities that would affect samples);
- soil sample descriptions;
- description and location of area sampled;
- sample numbers;
- field QC data;
- other important notes on field activities, conditions, or problems; and initials/signature of person entering data.

Entries made in the logbook should be of sufficient detail to reconstruct the taking of a sample by the reading of the entries and information recorded in it. No erasures or deletion marks are permitted. If a mistake is made in a logbook, it is corrected by placing a line through the error and rewritten in the note section.

7. LABORATORY ANALYSIS

7.1 LABORATORY

Design and execution of the testing program will be coordinated with an analytical chemist with experience in contaminated soil testing. The laboratory report will state the following in distinguishable print:

- dates of sampling and testing,
- sample descriptions and numbers,
- name and address of the laboratory performing the tests,
- name and qualifications of the person performing the test,
- test method used for all tests,
- detection limits achieved, and
- name and model number of major instruments used.

EPA SW-846 and American Standard for Testing Materials (ASTM) address all procedures proposed in this SAP. Extracts will be analyzed using Method 7471 for mercury and Method 6010 for elemental metals. The Method of Standard Addition will be performed for each metal on one of the submitted samples per sampling event. The laboratory will be required to achieve the required or estimated detection limits as specified in EPA SW-846. If equivalent methods are used, this must be justified in advance. Approval for any equivalent methods employed by the laboratory will be at the discretion of Cannon AFB and NMED.

7.2 Quality Assurance/Quality Control (QA/QC)

For all tests, the samples will be spiked with known quantities of the hazardous constituent and spike concentration and percent recovery reported. The surrogate spike recoveries will be reported for all organic tests. Results from method blanks on the samples will be submitted. Blanks will not be subtracted. The method of how the reported lower detectable limit was determined must also be reported. To ensure that the established data quality objectives (DQOs) can be attained, the level of analytical quality achieved will be at least Level III. One set of samples (samples collected in any one day or one sample package) per year will undergo the more rigorous QA/QC to ensure data of Level IV data quality. The laboratory will report data equivalent to Contract Laboratory Program (CLP) Routine Analytical Services deliverables. Data will be sufficiently documented to allow personnel to review and evaluate data quality.

7.3 SAMPLING DATA QUALITY OBJECTIVES (DQOs)

DQOs are quantitative and qualitative statements specified to ensure that data of known and appropriate quality are obtained during sampling. The overall objective of sampling is to provide an accurate, precise, and representative confirmation that the OD unit treatment process is not contaminating surrounding soils above RCRA action or background levels. DQOs will be followed in terms of precision, accuracy, representativeness, completeness, and comparability (PARCC). The PARCC parameters indicate data quality. The procedures described in this section are designed to obtain PARCC, for each sampling and analytical method and analysis.

7.3.1 Precision

Precision is a measure or estimate of the reproducibility of measurements under a given set of conditions. Specifically, precision is a qualitative measure of the variability of a group of measurements compared to their average value. A simple measure of precision is the standard deviation. The methods and protocols found in the most recent version of EPA SW-846 will be used by the laboratory performing the sample analyses.

The overall precision of measurement data is a mixture of sampling and analytical factors. The objective for precision in the chosen laboratory for certain samples is to equal the precision demonstrated for the CLP methods on similar samples. Laboratories commonly determine precision from duplicate samples; thus, precision is usually expressed as relative percent difference (RPD). The calculation for RPD is:
where V1 and V2 are the reported concentrations for each duplicate sample.

7.3.2 Accuracy

Accuracy is the ability to obtain a true value. The accuracy of an entire measurement system indicates any bias that exists; this is generally difficult to measure through the entire data collection process, since there are potentially many sources of error. These include the sampling process, field and laboratory cross contamination, preservation, handling, sample matrix, sample preparation, and analytical techniques. Sampling accuracy can be assessed by evaluating the results of field blanks; and analytical accuracy, through use of known and unknown QC samples and matrix spiked samples.

Laboratory accuracy is checked by adding a known amount of surrogate compounds to a sample and ensuring that amount is recovered in the analysis.

Surrogate compounds are compounds unlikely to be found in actual samples. This addition of a compound(s) is referred to as spiking, and the samples are referred to as spikes. The objective for accuracy in the chosen laboratory for certain samples is to equal the accuracy demonstrated for the CLP methods on similar samples being analyzed for similar concentrations of contaminants. Laboratory accuracy is expressed as percent recovery (PR), calculated by:

where So is the background value obtained by analyzing the sample (before the spike is added), Sa is the concentration of the spike added to the sample, and Ss is the value obtained by analyzing the sample after the spike has been added.

7.4 SAMPLE RETURN OR DISPOSAL

Unless directed otherwise by Cannon AFB, the laboratory will dispose of all soil samples following analysis. The laboratory will provide certification that its facilities qualify for the exemption in 40 Code of Federal Regulations (CFR) 261.4(d), which excludes waste samples from many hazardous waste management requirements. In addition, all laboratories will provide the base with an explanation of the disposal practices employed with respect to sample residual.

8. REFERENCES

New Mexico Environment Department, Hazardous and Radioactive Materials Bureau. "Notice of Deficiency Comments for Melrose Air Force Range RCRA Operating Permit." December 22, 1992, Santa Fe, New Mexico.

Snedecor, G.W. and Cochran, W.G. *Statistical Methods*, 6th Edition, Sect. 4.14

U.S. Environmental Protection Agency (EPA) November 1986. *Test Methods for Evaluating Solid Waste,* SW-846, 3rd Edition, Office of Solid Waste and Emergency Response, Washington, D.C.

United States Air Force

Environmental Restoration Program

ANALYTICAL RESULTS FOR SOILS AT THE OPEN BURN/OPEN DETONATION THERMAL TREATMENT FACILITY

May 8-9, 1994

Melrose Air Force Range
New Mexico

August 1994

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APPENDIX I

Metals,Sulfide, and Semi-Volatile data plus QA/QC for soil samples OB/OD1501 through OB/OD1802

APPENDIX II

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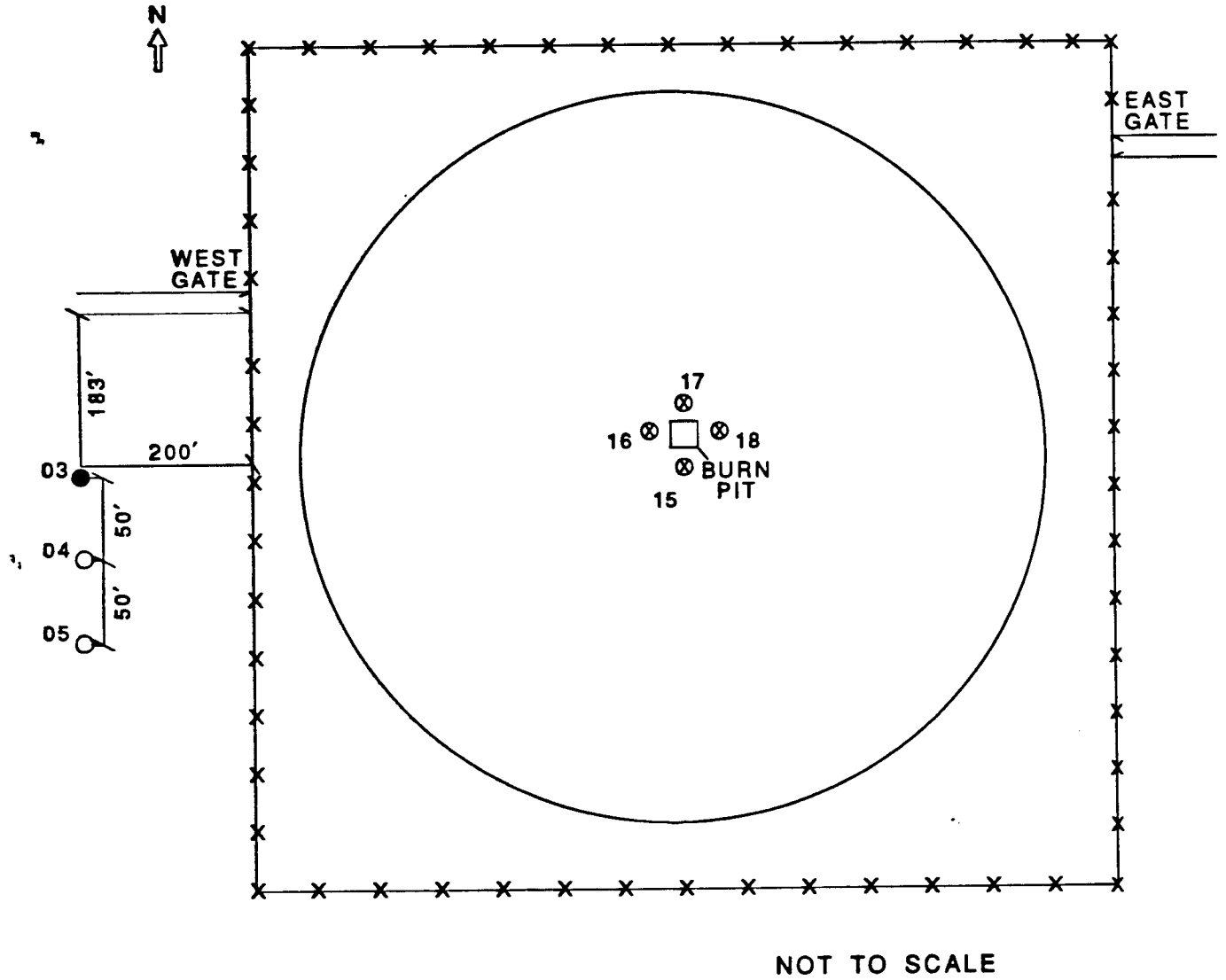
APPENDIX V

Field Notes.



EXPLANATION

● BORE HOLE--sampled at 15 feet

○ BORE HOLE--sampled at 10 and 15 feet

⊗ BORE HOLE--sampled at 0, 5, 10 and 15 feet

Figure 1.--Location of soil sampling sites, sampled on May 8-9, 1994.

SAMPLE NUMBERING SYSTEM

The soil sampling program at the Open Burn/Open Detonation prior to the May 1994 sampling envolved sampling soils at various depths at 14 locations on or near the site. The locations sampled were numbered in increasing order of when they were drilled beginning with OB/OD01 and going through OB/OD14. The May 1994 sampling involved sampling at a greater depth three previous locations designated OB/OD03, 04, and 05 and 4 new locations designated OB/OD15, 16, 17, and 18. The following table provides the sample ID, Type of sample, and depth.

Sample ID	Type of sample	Depth
OB/OD0306	Environmental	15
OB/OD0403	Environmental	10
OB/OD0404	Environmental	15
OB/OD0503	Environmental	10
OB/OD0504	Environmental (MS/MSD)	10
OB/OD0505	Environmental (Duplicate)	10
OB/OD0506	Environmental	15
OB/OD1501	Equipment Blank	--
OB/OD1502	Environmental	0-1
OB/OD1503	Environmental	5
OB/OD1504	Environmental	10
OB/OD1505	Environmental	15
OB/OD1601	Environmental	0-1
OB/OD1602	Environmental	5
OB/OD1603	Environmental	10
OB/OD1604	Environmental	15
OB/OD1701	Environmental	0-1
OB/OD1702	Environmental	5
OB/OD1703	Environmental (Duplicate)	5
OB/OD1704	Environmental	10
OB/OD1705	Environmental	15
OB/OD1801	Environmental	0-1
OB/OD1802	Environmental	5
OB/OD1803	Equipment Blank	--
OB/OD1804	Environmental	10
OB/OD1805	Environmental	15

Table 1--Concentrations of metals and radioactivity in soils from background holes OB/OD03, OB/OD04 and OB/OD05

Well/sample ID: Date sampled: Depth (feet):	OB/OD0306-1 05-09-94 15		OB/OD0403-1 05-09-94 10		OB/OD0404-1 05-09-94 15		OB/OD0503-1 05-09-94 10		OB/OD0505-1(Dup) 05-09-94 10		OB/OD0506-1 0509-94 15	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL
SW6010 (mg/kg)												
Aluminum	11900	20	8300	20.0	9760	20.0	9960	20.0	9600	20.0	9550	20.0
Antimony	ND	20	ND	20.0	ND	20.0	ND	20.0	ND	20.0	ND	20.0
Arsenic	ND	30	ND	30.0	ND	30.0	ND	30.0	ND	30.0	ND	30.0
Barium	179	10	127	10.0	566	10.0	221	10.0	234	10.0	154	10.0
Beryllium	0.52	0.20	0.42	0.20	0.50	0.20	0.47	0.20	0.50	0.20	0.56	0.20
Cadmium	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Calcium	55600	500	71800	500	75500	500	55400	500	49500	500	63500	500
Chromium	9.3	4.	5.9	4.0	7.4	4.0	8.1	4.0	7.5	4.0	7.7	4.0
Cobalt	ND	4.	ND	4.0	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Copper	6.2	3.0	5.1	3.0	4.9	3.0	6.5	3.0	6.5	3.0	5.5	3.0
Iron	9090	4.0	6810	4.0	7550	4.0	8020	4.0	7850	4.0	8020	4.0
Lead	ND	20.	ND	20	ND	20.0	ND	20.0	ND	20.0	ND	20.0
Magnesium	3900	500	2960	500	3550	500	3290	500	3110	500	3850	500
Manganese	130	1.0	117	1.0	131	1.0	131	1.0	135	1.0	143	1.0
Molybdenum	ND	4.0	ND	4.0	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Mercury	ND	0.1	ND	0.1	ND	0.1	ND	0.10	ND	0.10	ND	0.10
Nickel	12.6	4.0	11.5	4.0	39.3	4.0	14.7	4.0	14.7	4.0	16.3	4.0
Potassium	2470	500.	1780	500	1980	500	2120	500	2090	500	2020	500
Silver	ND	3.0	ND	3.0	ND	3.0	ND	3.0	ND	3.0	ND	3.0
Selenium	ND	40.0	ND	40.0	ND	40.0	ND	40.0	ND	40.0	ND	40.0
Sodium	ND	500.	ND	500	ND	500	ND	500	ND	500	ND	500
Thallium	ND	200.	ND	200	ND	200	ND	200	ND	200	ND	200
Vanadium	24.3	4.0	19.6	4.0	22.6	4.0	20.6	4.0	20.3	4.0	25.1	4.0
Zinc	21.4	1.0	16.7	1.0	18.8	1.0	20.2	1.0	19.2	1.0	19	1.0
Sulfide 376.2	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Radiochemistry SW9310 (PcI/G)												
Gross Alpha	12.2	+/- 3.8	10.2	+/- 3.4	7.0	+/- 2.9	8.5	+/- 3.1	8.7	+/- 3.5	6.8	+/- 3.1
gROSS bETA	17.7	+/- 2.3	19.2	+/- 2.3	15.7	+/- 2.2	20.8	+/- 2.4	20.1	+- 2.4	19.6	+/- 2.3

Table 2--Concentrations of metals and radioactivity in soils from hole OB/OD15

Well/sample ID:	OB/OD1502-1		OB/OD1503-1		OB/OD1504-1		OB/OD1505-1	
Date sampled:	05-08-94		05-08-94		05-08-94		05-08-94	
Depth (feet):	0-1		5		10		15	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL
SW6010 (mg/kg)								
Aluminum	12500	20	93790	20.0	7700	20.0	10900	20.0
Antimony	ND	20	ND	20.0	ND	20.0	ND	20.0
Arsenic	ND	30	ND	30.0	ND	30.0	ND	30.0
Barium	152	10	140	10.0	395	10.0	71.4	10.0
Beryllium	0.57	0.20	0.47	0.20	0.39	0.20	0.52	0.20
Cadmium	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Calcium	29800	500	67600	500	92100	500	65300	500
Chromium	9.7	4.	6.6	4.0	4.1	4.0	7.7	4.0
Cobalt	4.0	4.	ND	4.0	ND	4.0	ND	4.0
Copper	10.7	3.0	5.7	3.0	3.9	3.0	6.0	3.0
Iron	9710	4.0	7450	4.0	5680	4.0	8530	4.0
Lead	ND	20.	ND	20	ND	20.0	ND	20.0
Magnesium	2680	500	3330	500	2760	500	4300	500
Manganese	175	1.0	133	1.0	74.6	1.0	170	1.0
Molybdenum	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Mercury	ND	0.1	ND	0.1	ND	0.1	ND	0.10
Nickel	10.2	4.0	8.5	4.0	8.3	4.0	9.3	4.0
Potassium	2450	500.	1890	500	1510	500	2120	500
Silver	3.6	3.0	ND	3.0	ND	3.0	ND	3.0
Selenium	ND	40.0	ND	40.0	ND	40.0	ND	40.0
Sodium	ND	500.	ND	500	ND	500	ND	500
Thallium	ND	200.	ND	200	ND	200	ND	200
Vanadium	21.4	4.0	23.0	4.0	18.5	4.0	25.3	4.0
Zinc	25.2	1.0	18.4	1.0	14.7	1.0	20.5	1.0
Sulfide 376.2	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Radiochemistry SW9310 (PcI/G)								
Gross Alpha	9.4	+/- 3.5	5.7	+/- 2.7	6.4	+/- 2.9	5.0	+/- 3.0
gROSS bETA	21.4	+/- 2.5	19.4	+/- 2.3	18.4	+/- 2.3	17.7	+/- 2.3

Table 3--Concentrations of metals and radioactivity in soils from hole OB/OD16

Well/sample ID: Date sampled: Depth (feet):	OB/OD1601-1 05-08-94 0-1		OB/OD1602-1 05-08-94 5		OB/OD1603-1 05-08-94 10		OB/OD1604-1 05-08-94 15	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL
SW6010 (mg/kg)								
Aluminum	9710	20	8930	20.0	7280	20.0	10500	20.0
Antimony	ND	20	ND	20.0	ND	20.0	ND	20.0
Arsenic	ND	30	ND	30.0	ND	30.0	ND	30.0
Barium	157	10	180	10.0	461	10.0	131	10.0
Beryllium	0.52	0.20	0.53	0.20	0.44	0.20	0.62	0.20
Cadmium	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Calcium	64200	500	40400	500	98600	500	77000	500
Chromium	6.8	4.	7.7	4.0	5.1	4.0	7.2	4.0
Cobalt	ND	4.	ND	4.0	ND	4.0	4.2	4.0
Copper	6.0	3.0	12.1	3.0	4.4	3.0	6.3	3.0
Iron	7550	4.0	8070	4.0	5770	4.0	8790	4.0
Lead	ND	20.	ND	20	ND	20.0	ND	20.0
Magnesium	3420	500	2310	500	3000	500	4570	500
Manganese	133	1.0	166	1.0	89.4	1.0	178	1.0
Molybdenum	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Mercury	ND	0.1	ND	0.1	ND	0.1	ND	0.10
Nickel	8.4	4.0	11.6	4.0	7.4	4.0	9.4	4.0
Potassium	2030	500.	1940	500	1570	500	2220	500
Silver	ND	3.0	ND	3.0	ND	3.0	ND	3.0
Selenium	ND	40.0	ND	40.0	ND	40.0	ND	40.0
Sodium	526	500.	ND	500	ND	500	ND	500
Thallium	ND	200.	ND	200	ND	200	ND	200
Vanadium	23.7	4.0	18.2	4.0	18.9	4.0	27.5	4.0
Zinc	19.3	1.0	25.3	1.0	14.7	1.0	20.7	1.0
Sulfide 376.2	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Radiochemistry SW9310 (PcI/G)								
Gross Alpha	5.1	+/- 2.8	8.3	+/- 3.3	5.9	+/- 2.8	7.7	+/- 3.1
gROSS bETA	18.3	+/- 2.3	20.2	+/- 2.4	14.4	+/- 2.2	19.4	+/- 2.3

Table 4--Concentrations of metals and radioactivity in soils from hole OB/OD17

Well/sample ID:	OB/OD1701-1		OB/OD1702-1		OB/OD1703-1(Dup)		OB/OD1704-1		OB/OD1705-1	
Date sampled:	05-08-94		05-08-94		05-08-94		05-08-94		05-08-94	
Depth (feet):	0-1		5		5		10		15	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL
SW6010 (mg/kg)										
Aluminum	9300	20	3730	20.0	3220	20.0	5430	20.0	5280	20.0
Antimony	ND	20	ND	20.0	ND	20.0	ND	20.0	ND	20.0
Arsenic	ND	30	ND	30.0	ND	30.0	ND	30.0	ND	30.0
Barium	164	10	431	10.0	242	10.0	487	10.0	419	10.0
Beryllium	0.55	0.20	ND	0.20	ND	0.20	0.47	0.20	ND	0.20
Cadmium	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Calcium	53700	500	115000	500	140000	500	107000	500	115000	500
Chromium	7.5	4.	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Cobalt	ND	4.	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Copper	13.1	3.0	4.4	3.0	4.2	3.0	4.7	3.0	ND	3.0
Iron	10700	4.0	5320	4.0	5100	4.0	5160	4.0	4750	4.0
Lead	ND	20.	ND	20	ND	20.0	ND	20.0	ND	20.0
Magnesium	2490	500	2000	500	2090	500	2580	500	2900	500
Manganese	168	1.0	315	1.0	439	1.0	135	1.0	172	1.0
Molybdenum	ND	4.0	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Mercury	ND	0.1	ND	0.1	ND	0.1	ND	0.10	ND	0.10
Nickel	8.6	4.0	ND	4.0	ND	4.0	ND	4.0	41.8	4.0
Potassium	1960	500.	ND	500	ND	500	1190	500	1140	500
Silver	ND	3.0	ND	3.0	ND	3.0	ND	3.0	ND	3.0
Selenium	ND	40.0	ND	40.0	ND	40.0	ND	40.0	ND	40.0
Sodium	ND	500.	ND	500	ND	500	ND	500	ND	500
Thallium	ND	200.	ND	200	ND	200	ND	200	ND	200
Vanadium	18.4	4.0	26.2	4.0	27.8	4.0	20.7	4.0	20.3	4.0
Zinc	21.4	1.0	8.7	1.0	7.4	1.0	12.3	1.0	12.1	1.0
Sulfide 376.2	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Radiochemistry SW9310 (PcI/G)										
Gross Alpha	7.9	+/- 3.2	6.9	+/- 3.1	8.2	+/- 3.1	4.9	+/- 2.8	7.9	+/- 3.1
gROSS bETA	22.9	+/- 2.5	13.9	+/- 2.1	12.7	+/- 2.1	18.1	+/- 2.3	16.9	+- 2.2

Table 5--Concentrations of metals and radioactivity in soils from hole OB/OD18

Well/sample ID: Date sampled: Depth (feet):	OB/OD1801-1 05-08-94 0-1		OB/OD1802-1 05-08-94 5		OB/OD1804-1 05-09-94 10		OB/OD1805-1 05-09-94 15	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL
SW6010 (mg/kg)								
Aluminum	9150	20	7620	20.0	8670	20.0	8730	20.0
Antimony	ND	20	ND	20.0	ND	20.0	ND	20.0
Arsenic	ND	30	ND	30.0	ND	30.0	ND	30.0
Barium	128	10	111	10.0	356	10.0	78.1	10.0
Beryllium	0.55	0.20	0.45	0.20	120000	0.20	0.44	0.20
Cadmium	ND	2.0	ND	2.0	ND	2.0	ND	2.0
Calcium	32600	500	80500	500	92100	500	47300	500
Chromium	7.6	4.	5.4	4.0	4.0	4.0	6.8	4.0
Cobalt	ND	4.	ND	4.0	ND	4.0	ND	4.0
Copper	8.8	3.0	5.6	3.0	ND	3.0	5.1	3.0
Iron	7890	4.0	6330	4.0	6380	4.0	7210	4.0
Lead	ND	20.	ND	20	ND	20.0	ND	20.0
Magnesium	2270	500	3130	500	3300	500	3390	500
Manganese	168	1.0	122	1.0	82.4	1.0	142	1.0
Molybdenum	ND	4.0	ND	4.0	ND	4.0	ND	4.0
Mercury	ND	0.1	ND	0.1	ND	0.1	ND	0.10
Nickel	9.0	4.0	7.4	4.0	ND	4.0	8.2	4.0
Potassium	1830	500.	1690	500	1690	500	1840	500
Silver	ND	3.0	ND	3.0	ND	3.0	ND	3.0
Selenium	ND	40.0	ND	40.0	ND	40.0	ND	40.0
Sodium	ND	500.	ND	500	ND	500	ND	500
Thallium	ND	200.	ND	200	ND	200	ND	200
Vanadium	18.3	4.0	22.0	4.0	19.7	4.0	23.5	4.0
Zinc	20.2	1.0	16.4	1.0	15.3	1.0	16.7	1.0
Sulfide 376.2	ND	0.50	ND	0.50	ND	0.50	ND	0.50
Radiochemistry SW9310 (PcI/G)								
Gross Alpha	10.9	+/- 3.6	10.4	+/- 3.6	4.1	+/- 2.5	7.8	+/- 3.2
gROSS bETA	19.6	+/- 2.4	16.3	+/- 2.2	14.5	+/- 2.1	18.4	+/- 2.3

Table 6--Results of semi-volatile analysis of soils at OB/OD

Well/sample ID: Date sampled: Depth (feet):	OB/OD1601-1 05-08-94 0-1	
Analytes	Result	QL
SW8270 (mg/Kg) Di-n-butylphthalate	1.3	0.50

Well/sample ID: Date sampled: Depth (feet):	OB/OD0306-1 05-09-94 15		OB/OD0403-1 05-09-94 10		OB/OD0404-1 05-09-94 15		OB/OD1503-1 05-08-94 5		OB/OD1504-1 05-08-94 10		OB/OD1505-1 05-08-94 15	
Analytes	Result		Result	QL	Result	QL	Result	QL	Result	QL	Result	QL
SW8270 (ug/Kg)												
Cyclohexane, 1,4-dimethyl-, cis-	0.17		0.18		--		0.28		0.22		0.35	
Oxygenated Hydrocarbon	--		--		0.17		--		--		--	
Hexanedioic acid, mono(2-ethyl hexyl) ester	--		--		--		--		0.14		--	
Cyclohexane, methyl							--		--		--	
3-ctanone	--		--		--		--		--		--	
Saturated Hydrocarbon >C20	--		--		--		--		--		--	

Well/sample ID: Date sampled: Depth (feet):	OB/OD1601-1 05-08-94 0-1		OB?OD1602-1 05-08-94 5		OB/OD1603-1 05-08-94 10		OB/OD1604-1 05-08-94 15		OB/OD1701-1 05-08-94 0-1		OB/OD1702-1 05-08-94 5	
Analytes	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL
SW8270 (ug/Kg)												
Cyclohexane, 1,3-dimethyl-, cis-	0.22		0.19		--		0.17		--		0.29	
Oxygenated Hydrocarbon	0.14		--		0.15		--		--		--	
Hexanedioic acid, mono(2-ethyl-hexyl) ester	--		--		0.49		0.33		--		--	
cyclohexane, Methyl			--		0.13 to 0.21		0.37		--		--	
3-ctanone	0.19		--				--		--		--	
Saturated Hydrocarbon >C20	--		--		0.14 to 0.22		--		0.14 to 0.36		--	

Well/sample ID: Date sampled: Depth (feet):	OB/OD1703-1 (Dup) 05-08-94 5		OB/OD1704-1 05-08-94 10		OB/OD1705-1 05-08-94 15		OB/OD1801-1 05-08-94 0-1		OB/OD1802-1 05-08-94 5			
Analytes	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL	Result	QL
SW8270 (ug/Kg)												
Cyclohexane, 1,3-dimethyl-, cis-	0.20		0.36		0.19		0.29		0.20			
Oxygenated Hydrocarbon	--		--		0.21		--		--			
Hexanedioic acid, mono(2-ethyl-hexyl) ester	--		0.34		--		--		--			
	--		--		--		--		--			
3-ctanone	--		--		--		--		--			
Cyclohexane, methyl-												
Saturated Hydrocarbon >C20	--		--		--		--		--			

Table 7--Summary of SW8270 Tentatively Identified Compounds

Appendix I

Metals, sulfide, and semi-volatile data plus QA/QC soil samples OB/OD 1501 throughout OB/OD 1802

Enseco

ANALYTICAL RESULTS

FOR

U.S. GEOLOGICAL SURVEY

ENSECO-RMAL NO. 035343

MAY 31, 1994

Reviewed by: Karen Germann

Karen Germann

Julieann L. Kramer

Julieann L. Kramer

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

I. OVERVIEW

On May 10, 1994, Enseco-Rocky Mountain Analytical Laboratory received 1 aqueous and 15 soil samples from the U.S. Geological Survey.

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:

I. Overview
II. Sample Description Information/Analytical Test Requests
III. Analytical Results
IV. Quality Control Report

Samples 035343-0002 through 0016 were analyzed by method 8330 for explosives. The associated DCS pair 16MAY94-N1 showed the percent recovery for 3-nitrotoluene outside QC limits (low); however, the MS/SD pair analyzed with this QC lot showed all percent recoveries within QC limits.

Sample 035343-0001 was analyzed by method 8330 for explosives. The associated DCS pair 15MAY94-N1 showed the percent recovery for 4-amino-2,6-dinitrotoluene outside QC limits (high); however, no target compounds were detected in sample 0001.

The results for the Gross Alpha/Beta analyses associated with these samples have been reported in RMAL project 035755.

With the exceptions as mentioned above, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

II. SAMPLE DESCRIPTION INFORMATION/ANALYTICAL TEST REQUESTS

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.

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 035343	Group Code	Analysis Description	Custom Test?
0001	A	Semivolatile Organics	N
		Prep - Semivolatile Organics by GC/MS	N
		Explosives by HPLC - Low Level	N
		Prep - Explosives by HPLC - Low Level	N
		Sulfide, Total	N
		ICP Suite: Air Force	N
		Prep - Total Metals, ICP	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Gross Alpha/Beta- Gas Proportional Counter	N
		Prep- Gross Alpha/Beta Gas Proportional Counter	N
		Semivolatiles Library Search (20 Compound TID)	N
0002 - 0016	B	Semivolatile Organics	N
		Prep-Semivolatile Organics	N
		Semivolatiles Library Search (20 Compound TID)	N
		Explosives by HPLC - Low Level	N
		Prep - Explosives by HPLC - Low Level	N
		Sulfide, Total	N
		ICP Suite: Air Force	N
		Prep - Total Metals, ICP	N
		Mercury, Cold Vapor AA	N
		Prep - Mercury, Cold Vapor AA	N
		Gross Alpha/Beta-Gas Proportional Counter	N
		Prep- Gross Alpha/Beta-Gas Proportional Counter	N
		Percent Water: ASTM D2216	N

SAMPLE DESCRIPTION INFORMATION
for
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
035343-0001-SA	OB/OD1501-2	AQUEOUS	08 MAY 94	08:10	10 MAY 94
035343-0002-SA	OB/OD1502-1	SOIL	08 MAY 94	08:30	10 MAY 94
035343-0003-SA	OB/OD1503-1	SOIL	08 MAY 94	08:45	10 MAY 94
035343-0004-SA	OB/OD1504-1	SOIL	08 MAY 94	09:30	10 MAY 94
035343-0005-SA	OB/OD1505-1	SOIL	08 MAY 94	10:00	10 MAY 94
035343-0006-SA	OB/OD1601-1	SOIL	08 MAY 94	10:20	10 MAY 94
035343-0007-SA	OB/OD1602-1	SOIL	08 MAY 94	11:15	10 MAY 94
035343-0008-SA	OB/OD1603-1	SOIL	08 MAY 94	11:40	10 MAY 94
035343-0009-SA	OB/OD1604-1	SOIL	08 MAY 94	12:20	10 MAY 94
035343-0010-SA	OB/OD1701-1	SOIL	08 MAY 94	12:45	10 MAY 94
035343-0011-SA	OB/OD1702-1	SOIL	08 MAY 94	13:05	10 MAY 94
035343-0012-SA	OB/OD1703-1	SOIL	08 MAY 94	13:10	10 MAY 94
035343-0013-SA	OB/OD1704-1	SOIL	08 MAY 94	13:45	10 MAY 94
035343-0014-SA	OB/OD1705-1	SOIL	08 MAY 94	14:10	10 MAY 94
035343-0015-SA	OB/OD1801-1	SOIL	08 MAY 94	14:35	10 MAY 94
035343-0016-SA	OB/OD1802-1	SOIL	08 MAY 94	14:50	10 MAY 94

III. 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. The date prepared is typically the date an extraction or digestion was initiated. For volatile organic compounds in water, the date prepared is the date the screening of the sample was performed.

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 3.5, May, 1992.

In addition, surrogate recovery data is presented for all GC/MS analyses. The surrogate recovery is an indication of the affect of the sample matrix on the performance of the method. The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is given in Section IV.

The analytical data reported are subject to the following limitations of the analytical methodology:

Volatile Organics

a) Due to the chemical nature of ethanol, this component cannot be consistently recovered using EPA Method 624 or 8240. This component is reported with a NR (Not Recoverable) in place of a reporting limit.

b) Methylene chloride and acetone are common laboratory contaminants in GC/MS analysis. We have programs in place to minimize contamination, occasionally these compounds will be found at low levels in samples.

Semivolatile Organics

a) Benzo(b) and benzo(k) fluoranthene cannot be differentiated based on their mass spectra; retention times are almost identical. The isomer which is the closest in retention time to the sample is reported.

b) 1,2-diphenylhydrazine is measured as azobenzene.

c) Diphenylamine cannot be distinguished from N-nitrosodiphenylamine.

d) 3-Methyl phenol and 4-methyl phenol cannot be differentiated because their mass spectra and retention times are almost identical. Results are reported as 3/4-methyl phenol (or m&p-cresols).

e) Several Appendix IX and Refinery List compounds are not consistently recovered using Method 8270, and reporting limits cannot be established. These compounds include: dimethoate, famphur, hexachlorophene, 4-nitroquinoline-1-oxide, 4-phenylenedianine, and benzenethiol.

f) Two Refinery List compounds, pyridine and quinoline, are not recovered after alumina column cleanup.

Metals

All nominal reporting limits for metals have been established from instrument detection limit (IDL) evaluations and represent the level above which reliable data can be routinely obtained. Low level standards are analyzed seven times on three non-consecutive days on each instrument. The standard deviations of the three runs are summed to yield the IDL. Nominal reporting limits are generally 2-5 times the IDL (consistent with the American Chemical Society definition for the Limit of Quantification). The ability to achieve these quoted reporting limits is verified each quarter. Reporting limits above the nominal levels are often submitted due to matrix interferences or elevated analyte levels.

Reporting limits for metals analyzed by Inductively Coupled Plasma (ICP) are typically raised only for dilution due to an analyte exceeding the instrument linear range. Background and interelement interferences are corrected automatically and do not require dilution.

Metals analyzed by Graphite Furnace Atomic Absorption (GFAA) are subject to matrix interferences. Consequently, Enseco protocol is to analyze a spiked aliquot with every sample. The severity of the interference, based upon analyte level and spike recovery, is assessed against specific criteria and the need for an elevated reporting limit or dilution is determined.

The analysis of mercury by Cold Vapor Atomic Absorption (CVAA) is generally free from matrix interferences. As with ICP, reporting limits are raised only for dilution due to a sample concentration exceeding the linear range of the instrument.

g) Bis-2-(ethyl)hexyl-phthalate is a common laboratory contaminant in GC/MS analysis. We have programs in place to minimize this contamination, occasionally these compounds will be found at low levels in samples.

Tentatively Identified Compounds

This report presents results for the "identification" of unknown compounds that were detected in the GC/MS analysis. The results from this work are presented as "tentatively identified compounds" (TIC). The approach used for reporting TICs was based on the protocol established for this purpose in the EPA Superfund methods and on guidelines established by the American Chemical Society (ACS).

In summary, the mass spectrum of chromatographic peaks in concentrations in excess of 10% of the internal standard were obtained. Normally, the number of unknown compounds identified is limited to 10 compounds in the volatile fraction and 20 compounds in the semivolatile fraction. Each mass spectrum was then compared to a library of over 30,000 reference spectra in a computerized "library search." The three "best" matches obtained by the computer were hardcopied along with the mass spectrum of the unknown peak. This information was then reviewed by an analyst who "identified" the compound based on the available information.

All identifications were based on the "Guidelines for GC/MS Identification" developed by the American Chemical Society (Environmental Science and Technology, 1982, 16 143A). As recommended in these guidelines, identifications of unknown substances were reported with a level of confidence. The three levels of confidence cited in the ACS guidelines and used in this report are as follows:

Level 3: Confirmed Identification

The identification is based on the analysis of an authentic standard.

Level 2: Confident Identification

Good agreement was observed between the unknown compound and a specific library spectrum.

Level 1: Tentative Identification

The unknown compound is only indicative of a specific library spectrum.

Class Identification

The unknown compound was not similar to a specific library spectrum, but it did contain ions characteristic of a class of compounds (saturated hydrocarbon, chlorinated hydrocarbon, etc.).

If there were no library spectra similar to the unknown, and it could not be assigned to a particular class of compounds, the compound is reported as "unknown."

Quantitation of TICs is based on the total ionization peak area relative to an internal standard, assuming a response factor of one. Accordingly, the reported concentration is an estimate.

In general, mass spectrometry cannot distinguish isomers (compounds with the same molecular formula). Therefore, an identified compound may be any one of several different isomers.

The tentatively identified compounds in this report include some compounds reported as "siloxanes". Siloxanes are common laboratory and field artifacts or contaminants. Potential sources include silicon-based grease in the field or laboratory plus the liquid phase coating on gas chromatography columns, as well as other equipment in the laboratory. However, siloxanes may be present in environmental samples from spills of silicone oils or lubricating oils with siloxane additives.

Metals

All nominal reporting limits for metals have been established from instrument detection limit (IDL) evaluations and represent the level above which reliable data can be routinely obtained. Low level standards are analyzed seven times on three non-consecutive days on each instrument. The standard deviations of the three runs are summed to yield the IDL. Nominal reporting limits are generally 2-5 times the IDL (consistent with the American Chemical Society definition for the Limit of Quantification). The ability to achieve these quoted reporting limits is verified each quarter. Reporting limits above the nominal levels are often submitted due to matrix interferences or elevated analyte levels.

Reporting limits for metals analyzed by Inductively Coupled Plasma (ICP) are typically raised only for dilution due to an analyte exceeding the instrument linear range. Background and interelement interferences are corrected automatically and do not require dilution.

Metals analyzed by Graphite Furnace Atomic Absorption (GFAA) are subject to matrix interferences. Consequently, Enseco protocol is to analyze a spiked aliquot with every sample. The severity of the interference, based upon analyte level and spike recovery, is assessed against specific criteria and the need for an elevated reporting limit or dilution is determined.

The analysis of mercury by Cold Vapor Atomic Absorption (CVAA) is generally free from matrix interferences. As with ICP, reporting limits are raised only for dilution due to a sample concentration exceeding the linear range of the instrument.

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 14 MAY 94

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	5.0
1,4-Dichlorobenzene	ND	ug/L	5.0
1,2-Dichlorobenzene	ND	ug/L	5.0
bis(2-Chloroisopropyl) ether	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Nitrobenzene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
bis(2-Chloroethoxy) methane	ND	ug/L	10
2,4-Dichlorophenol	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
Naphthalene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	10
2,4,6-Trichlorophenol	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2-Chloronaphthalene	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acenaphthene	ND	ug/L	10
2,4-Dinitrophenol	ND	ug/L	50
4-Nitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Diethyl phthalate	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Fluorene	ND	ug/L	10
4,6-Dinitro-2-methylphenol	ND	ug/L	50
4-Bromophenyl phenyl ether	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS Sampled: 08 MAY 94 Received: 10 MAY 94
Authorized: 10 MAY 94 Prepared: 14 MAY 94 Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	ug/L	30
Phenanthrene	ND	ug/L	10
Anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Pyrene	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	30
Benzo(a)anthracene	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Acetophenone	ND	ug/L	50
Aniline	ND	ug/L	50
4-Aminobiphenyl	ND	ug/L	50
Benzidine	ND	ug/L	170
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Chloroaniline	ND	ug/L	20
Dibenz(a,j)acridine	ND	ug/L	--
Dibenzofuran	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	50
7,12-Dimethylbenz(a)-anthracene	ND	ug/L	50
a,a-Dimethylphenethyl-amine	ND	ug/L	--
Diphenylamine	ND	ug/L	50
1,2-Diphenylhydrazine	ND	ug/L	50
Ethyl methanesulfonate	ND	ug/L	50
3-Methylcholanthrene	ND	ug/L	50
Methyl methanesulfonate	ND	ug/L	50
2-Methylnaphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	50
2-Naphthylamine	ND	ug/L	50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 14 MAY 94

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	58
Pentachlorobenzene	ND	ug/L	50
Pentachloronitrobenzene	ND	ug/L	50
Phenacetin	ND	ug/L	50
2-Picoline	ND	ug/L	50
1,2,4,5-Tetrachloro-benzene	ND	ug/L	50
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	50
N-Nitrosodimethylamine	ND	ug/L	50
N-Nitrosopiperidine	ND	ug/L	50
2,6-Dichlorophenol	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	50
Pronamide	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	90	%
2-Fluorobiphenyl	78	%
Terphenyl-d14	81	%
Phenol-d5	77	%
2-Fluorophenol	78	%
2,4,6-Tribromophenol	81	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	77	%
2-Fluorobiphenyl	80	%
Terphenyl-d14	101	%
Phenol-d5	86	%
2-Fluorophenol	82	%
2,4,6-Tribromophenol	91	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	82	%
2-Fluorobiphenyl	79	%
Terphenyl-d14	95	%
Phenol-d5	83	%
2-Fluorophenol	82	%
2,4,6-Tribromophenol	76	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.28	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	0.50
Butyl benzyl phthalate	ND	mg/kg	2.5
3,3'-Dichlorobenzidine	ND	mg/kg	0.50
Benzo(a)anthracene	ND	mg/kg	1.0
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	0.50
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	2.5
Benzoic acid	ND	mg/kg	5.6
Benzyl alcohol	ND	mg/kg	2.5
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	1.0
Dibenzofuran	ND	mg/kg	--
p-Dimethylaminoazobenzene	ND	mg/kg	0.50
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	2.5
Diphenylamine	ND	mg/kg	--
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	2.5
1-Naphthylamine	ND	mg/kg	0.50
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	80	%
2-Fluorobiphenyl	78	%
Terphenyl-d14	83	%
Phenol-d5	84	%
2-Fluorophenol	78	%
2,4,6-Tribromophenol	70	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.22	ug/kg		2
Hexanedioic acid, mono(2-ethylhexyl)ester	0.14	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	79	%
2-Fluorobiphenyl	77	%
Terphenyl-d14	86	%
Phenol-d5	80	%
2-Fluorophenol	78	%
2,4,6-Tribromophenol	71	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.35	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	1.3	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	86	%
2-Fluorobiphenyl	82	%
Terphenyl-d14	90	%
Phenol-d5	86	%
2-Fluorophenol	83	%
2,4,6-Tribromophenol	76	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.22	ug/kg		2
Oxygenated Hydrocarbon	0.14	ug/kg		
Oxygenated Hydrocarbon	0.14	ug/kg		
3-Octanone	0.19	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	86	%
2-Fluorobiphenyl	81	%
Terphenyl-d14	90	%
Phenol-d5	82	%
2-Fluorophenol	79	%
2,4,6-Tribromophenol	69	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.19	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	86	%
2-Fluorobiphenyl	79	%
Terphenyl-d14	82	%
Phenol-d5	82	%
2-Fluorophenol	81	%
2,4,6-Tribromophenol	74	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Cyclohexane, methyl-	0.13	ug/kg	2
Cyclohexane, methyl-	0.21	ug/kg	2
Oxygenated Hydrocarbon	0.15	ug/kg	
Hexanedioic acid, mono(2-ethylhexyl)ester	0.49	ug/kg	
Saturated Hydrocarbon: >C20	0.22	ug/kg	
Saturated Hydrocarbon: >C20	0.14	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	0.50
Butyl benzyl phthalate	ND	mg/kg	2.5
3,3'-Dichlorobenzidine	ND	mg/kg	0.50
Benzo(a)anthracene	ND	mg/kg	1.0
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	0.50
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	2.5
Benzoic acid	ND	mg/kg	5.6
Benzyl alcohol	ND	mg/kg	2.5
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	1.0
Dibenzofuran	ND	mg/kg	--
p-Dimethylaminoazobenzene	ND	mg/kg	0.50
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	2.5
Diphenylamine	ND	mg/kg	--
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	2.5
1-Naphthylamine	ND	mg/kg	0.50
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	86	%
2-Fluorobiphenyl	81	%
Terphenyl-d14	90	%
Phenol-d5	80	%
2-Fluorophenol	81	%
2,4,6-Tribromophenol	75	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Cyclohexane, methyl-	0.37	ug/kg	2
Cyclohexane, 1,3-dimethyl-, cis-	0.17	ug/kg	2
Hexanedioic acid, mono(2-ethylhexyl)ester	0.33	ug/kg	2
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	90	%
2-Fluorobiphenyl	83	%
Terphenyl-d14	78	%
Phenol-d5	83	%
2-Fluorophenol	83	%
2,4,6-Tribromophenol	81	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Saturated Hydrocarbon: >C20	0.14	ug/kg	
Saturated Hydrocarbon: >C20	0.23	ug/kg	
Saturated Hydrocarbon: >C20	0.28	ug/kg	
Saturated Hydrocarbon: >C20	0.35	ug/kg	
Saturated Hydrocarbon: >C20	0.36	ug/kg	
Saturated Hydrocarbon: >C20	0.33	ug/kg	
Saturated Hydrocarbon: >C20	0.19	ug/kg	
Saturated Hydrocarbon: >C20	0.18	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

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Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	88	%
2-Fluorobiphenyl	82	%
Terphenyl-d14	78	%
Phenol-d5	83	%
2-Fluorophenol	84	%
2,4,6-Tribromophenol	74	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

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Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.29	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

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Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethyl-amine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	2.5
Hexachlorocyclopentadiene	ND	mg/kg	0.50
			0.50

Surrogate	Recovery	
Nitrobenzene-d5	85	%
2-Fluorobiphenyl	80	%
Terphenyl-d14	93	%
Phenol-d5	84	%
2-Fluorophenol	80	%
2,4,6-Tribromophenol	67	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.20	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification :

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethyl-amine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	67	%
2-Fluorobiphenyl	69	%
Terphenyl-d14	83	%
Phenol-d5	74	%
2-Fluorophenol	69	%
2,4,6-Tribromophenol	57	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.36	ug/kg		2
Hexanedioic acid, mono(2-ethylhexyl)ester	0.34	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	92	%
2-Fluorobiphenyl	87	%
Terphenyl-d14	96	%
Phenol-d5	93	%
2-Fluorophenol	87	%
2,4,6-Tribromophenol	65	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
Oxygenated Hydrocarbon	0.19	ug/kg	
Cyclohexane, 1,3-dimethyl-, cis-	0.21	ug/kg	2
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	
None Detected	ND	ug/kg	

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	76	%
2-Fluorobiphenyl	76	%
Terphenyl-d14	84	%
Phenol-d5	77	%
2-Fluorophenol	76	%
2,4,6-Tribromophenol	67	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.29	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethyl-amine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 17 MAY 94

Received: 10 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	78	%
2-Fluorobiphenyl	81	%
Terphenyl-d14	82	%
Phenol-d5	81	%
2-Fluorophenol	78	%
2,4,6-Tribromophenol	67	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: NA

Received: 10 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.20	ug/kg		2
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		
None Detected	ND	ug/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 15 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	0.80
RDX	ND	ug/L	0.84
1,3,5-Trinitrobenzene	ND	ug/L	0.26
1,3-Dinitrobenzene	ND	ug/L	0.11
Tetryl	ND	ug/L	0.80
Nitrobenzene	ND	ug/L	0.25
2,4,6-Trinitrotoluene	ND	ug/L	0.11
4-Amino-2,6-dinitrotoluene	ND	ug/L	0.060
2-Amino-4,6-dinitrotoluene	ND	ug/L	0.035
2,6-Dinitrotoluene	ND	ug/L	0.31
2,4-Dinitrotoluene	ND	ug/L	0.020
2-Nitrotoluene	ND	ug/L	0.25
4-Nitrotoluene	ND	ug/L	0.25
3-Nitrotoluene	ND	ug/L	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method HPLC

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: 16 MAY 94

Received: 10 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.20	6010	17 MAY 94	18 MAY 94
Antimony	ND	mg/L	0.20	6010	17 MAY 94	18 MAY 94
Arsenic	ND	mg/L	0.30	6010	17 MAY 94	18 MAY 94
Barium	ND	mg/L	0.10	6010	17 MAY 94	18 MAY 94
Beryllium	ND	mg/L	0.0020	6010	17 MAY 94	18 MAY 94
Cadmium	ND	mg/L	0.0050	6010	17 MAY 94	18 MAY 94
Calcium	ND	mg/L	5.0	6010	17 MAY 94	18 MAY 94
Chromium	ND	mg/L	0.030	6010	17 MAY 94	18 MAY 94
Cobalt	ND	mg/L	0.040	6010	17 MAY 94	18 MAY 94
Copper	ND	mg/L	0.030	6010	17 MAY 94	18 MAY 94
Iron	0.081	mg/L	0.040	6010	17 MAY 94	18 MAY 94
Lead	ND	mg/L	0.20	6010	17 MAY 94	18 MAY 94
Magnesium	ND	mg/L	5.0	6010	17 MAY 94	18 MAY 94
Manganese	ND	mg/L	0.010	6010	17 MAY 94	18 MAY 94
Mercury	ND	mg/L	0.00020	7470	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/L	0.040	6010	17 MAY 94	18 MAY 94
Nickel	ND	mg/L	0.040	6010	17 MAY 94	18 MAY 94
Potassium	ND	mg/L	5.0	6010	17 MAY 94	18 MAY 94
Selenium	ND	mg/L	0.40	6010	17 MAY 94	18 MAY 94
Silver	ND	mg/L	0.030	6010	17 MAY 94	18 MAY 94
Sodium	ND	mg/L	5.0	6010	17 MAY 94	18 MAY 94
Thallium	ND	mg/L	5.0	6010	17 MAY 94	18 MAY 94
Vanadium	ND	mg/L	0.040	6010	17 MAY 94	18 MAY 94
Zinc	ND	mg/L	0.010	6010	17 MAY 94	18 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	12500	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	152	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.57	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	29800	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	9.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	4.0	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	10.7	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	9710	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2680	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	175	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	10.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2450	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	3.6	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	21.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	25.2	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9370	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	140	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.47	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	67600	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	6.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	5.7	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7450	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3330	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	133	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	8.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1890	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	23.0	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	18.4	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	7700	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	395	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.39	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	92100	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	4.1	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	3.9	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	5680	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2760	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	74.6	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	8.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1510	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	18.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	14.7	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	10900	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	71.4	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.52	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	65300	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.0	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	8530	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	4300	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	170	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	9.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2120	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	25.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	20.5	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9710	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	157	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.52	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	64200	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	6.8	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.0	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7550	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3420	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	133	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	8.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2030	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	526	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	23.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	19.3	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8930	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	180	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.53	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	40400	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	12.1	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	8070	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2310	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	166	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	11.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1940	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	18.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	25.3	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	7280	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	461	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.44	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	98600	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	5.1	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	4.4	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	5770	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	89.4	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	7.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1570	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	18.9	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	14.7	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	10500	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	131	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.62	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	77000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	4.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.3	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	8790	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	4570	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	178	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	9.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2220	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	27.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	20.7	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9300	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	164	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.55	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	53700	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	13.1	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	10700	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2490	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	168	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	8.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1960	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	18.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	24.0	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	3730	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	431	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	ND	mg/kg	0.40	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	115000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	4.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Iron	5320	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	315	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	ND	mg/kg	8.0	6010	20 MAY 94	22 MAY 94
Potassium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	400	6010	20 MAY 94	22 MAY 94
Vanadium	26.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	8.7	mg/kg	2.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	3220	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	242	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	ND	mg/kg	0.40	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	140000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	4.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Iron	5100	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2090	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	439	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	ND	mg/kg	8.0	6010	20 MAY 94	22 MAY 94
Potassium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	400	6010	20 MAY 94	22 MAY 94
Vanadium	27.8	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	7.4	mg/kg	2.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5430	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	487	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.47	mg/kg	0.40	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	107000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	4.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Iron	5160	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2580	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	135	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	ND	mg/kg	8.0	6010	20 MAY 94	22 MAY 94
Potassium	1190	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	400	6010	20 MAY 94	22 MAY 94
Vanadium	20.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	12.3	mg/kg	2.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5280	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	419	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	ND	mg/kg	0.40	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	115000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Iron	4750	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2900	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	172	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	41.8	mg/kg	8.0	6010	20 MAY 94	22 MAY 94
Potassium	1140	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	400	6010	20 MAY 94	22 MAY 94
Vanadium	20.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	12.1	mg/kg	2.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9150	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	128	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.55	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	32600	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	8.8	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7890	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2270	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	168	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	9.0	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1830	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	18.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	20.2	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	7620	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	111	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.45	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	80500	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	5.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	5.6	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	6330	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3130	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	122	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	7.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1690	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	22.0	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	16.4	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035343-0001-SA
Matrix: AQUEOUS
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/L	0.050	376.2	NA	15 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Scott McPhail

Approved By: Dave Roberts

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035343-0002-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	3.6	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035343-0003-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	11	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035343-0004-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	11	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035343-0005-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	10	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035343-0006-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	8.8	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035343-0007-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	2.1	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035343-0008-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	10	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035343-0009-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	9.4	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035343-0010-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	2.3	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035343-0011-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	3.9	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035343-0012-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	3.5	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035343-0013-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	7.0	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035343-0014-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.3	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035343-0015-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	3.8	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035343-0016-SA
Matrix: SOIL
Authorized: 10 MAY 94

Sampled: 08 MAY 94
Prepared: See Below

Received: 10 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	11	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

IV. QUALITY CONTROL REPORT

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.

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 surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

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.

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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)
035343-0001-SA	AQUEOUS	625-A	14 MAY 94-N1	14 MAY 94-N1
035343-0002-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0003-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0004-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0005-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0006-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0007-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0008-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0009-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0010-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0011-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0012-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0013-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0014-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0015-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035343-0016-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1

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DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 625-A Matrix: AQUEOUS QC Lot: 14 MAY 94-N1 Concentration Units: ug/L								
Phenol	100	74.0	70.9	72.4	72	45-109	4.3	29
2-Chlorophenol	100	86.0	80.0	83.0	83	47-111	7.2	29
1,4-Dichlorobenzene	50	34.7	31.9	33.3	67	32-103	8.4	28
N-Nitroso-di-n-propylamine	50	39.7	37.0	38.4	77	49-107	7.0	24
1,2,4-Trichlorobenzene	50	35.3	31.3	33.3	67	33-102	12	27
4-Chloro-3-methylphenol	100	89.1	82.4	85.8	86	50-115	7.8	27
Acenaphthene	50	40.1	37.0	38.6	77	47-109	8.0	24
4-Nitrophenol	100	94.2	94.0	94.1	94	40-127	0.2	51
2,4-Dinitrotoluene	50	40.9	38.4	39.6	79	46-118	6.3	22
Pentachlorophenol	100	95.1	83.0	89.0	89	30-136	14	34
Pyrene	50	43.9	39.3	41.6	83	42-129	11	23
Category: 8270-S Matrix: SOIL QC Lot: 17 MAY 94-N1 Concentration Units: ug/kg								
Phenol	6670	4030	4290	4160	62	45-107	6.2	19
2-Chlorophenol	6670	4740	4960	4850	73	46-112	4.5	17
1,4-Dichlorobenzene	3330	2340	2490	2420	73	58-101	6.2	22
N-Nitroso-di-n-propylamine	3330	2410	2510	2460	74	58-101	4.1	18
1,2,4-Trichlorobenzene	3330	2490	2640	2560	77	59-103	5.8	24
4-Chloro-3-methylphenol	6670	5120	5320	5220	78	41-123	3.8	16
Acenaphthene	3330	2460	2490	2480	74	54-110	1.2	15
4-Nitrophenol	6670	5340	5500	5420	81	30-145	3.0	22
2,4-Dinitrotoluene	3330	2660	2720	2690	81	51-117	2.2	17
Pentachlorophenol	6670	5350	5440	5400	81	32-130	1.7	29
Pyrene	3330	2620	3060	2840	85	31-142	15	20

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

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SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 625-A				
Matrix: AQUEOUS				
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1				
Concentration Units: ug/L				
Nitrobenzene-d5	100	86.0	86	49-113
2-Fluorobiphenyl	100	75.9	76	42-104
Terphenyl-d14	100	89.2	89	29-139
2-Fluorophenol	200	153	76	44-106
Phenol-d5	200	156	78	50-109
2,4,6-Tribromophenol	200	162	81	33-125
Category: 8270-S				
Matrix: SOIL				
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1				
Concentration Units: ug/kg				
Nitrobenzene-d5	1670	1460	87	62-110
2-Fluorobiphenyl	1670	1410	84	61-114
Terphenyl-d14	1670	1660	99	49-147
2-Fluorophenol	3330	2710	81	60-115
Phenol-d5	3330	2780	83	61-111
2,4,6-Tribromophenol	3330	2390	72	44-110

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

METHOD BLANK REPORT
Semivolatile Organics by GC/MS

Test: 625-AFIR-A
Matrix: AQUEOUS
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Phenol	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	5.0
1,4-Dichlorobenzene	ND	ug/L	5.0
1,2-Dichlorobenzene	ND	ug/L	5.0
bis(2-Chloroisopropyl) ether	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Nitrobenzene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
bis(2-Chloroethoxy) methane	ND	ug/L	10
2,4-Dichlorophenol	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
Naphthalene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	10
2,4,6-Trichlorophenol	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2-Chloronaphthalene	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acenaphthene	ND	ug/L	10
2,4-Dinitrophenol	ND	ug/L	50
4-Nitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Diethyl phthalate	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Fluorene	ND	ug/L	10
4,6-Dinitro-2-methylphenol	ND	ug/L	50
4-Bromophenyl phenyl ether	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10

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

Test: 625-AFIR-A
Matrix: AQUEOUS
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Pentachlorophenol	ND	ug/L	30
Phenanthrene	ND	ug/L	10
Anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Pyrene	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	30
Benzo(a)anthracene	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Acetophenone	ND	ug/L	50
Aniline	ND	ug/L	50
4-Aminobiphenyl	ND	ug/L	50
Benzidine	ND	ug/L	170
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Chloroaniline	ND	ug/L	20
Dibenz(a,j)acridine	ND	ug/L	--
Dibenzofuran	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	50
7,12-Dimethylbenz(a)-anthracene	ND	ug/L	50
a,a-Dimethylphenethylamine	ND	ug/L	--
Diphenylamine	ND	ug/L	50
1,2-Diphenylhydrazine	ND	ug/L	50
Ethyl methanesulfonate	ND	ug/L	50
3-Methylcholanthrene	ND	ug/L	50
Methyl methanesulfonate	ND	ug/L	50
2-Methylnaphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	50
2-Naphthylamine	ND	ug/L	50

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

Test: 625-AFIR-A
Matrix: AQUEOUS
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1

Analyte	Result	Units	Reporting Limit
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	58
Pentachlorobenzene	ND	ug/L	50
Pentachloronitrobenzene	ND	ug/L	50
Phenacetin	ND	ug/L	50
2-Picoline	ND	ug/L	50
1,2,4,5-Tetrachloro-benzene	ND	ug/L	50
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	50
N-Nitrosodimethylamine	ND	ug/L	50
N-Nitrosopiperidine	ND	ug/L	50
2,6-Dichlorophenol	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	50
Pronamide	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachlorobenzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

QC LOT ASSIGNMENT REPORT
Organics by Chromatography

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035343-0001-SA	AQUEOUS	8330-LL-A	15 MAY 94-N1	15 MAY 94-N1
035343-0002-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0003-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0004-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0005-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0006-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0007-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0008-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0009-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0010-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0011-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0012-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0013-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0014-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0015-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1
035343-0016-SA	SOIL	8330-LL-S	16 MAY 94-N1	16 MAY 94-N1

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DUPLICATE CONTROL SAMPLE REPORT
Organics by Chromatography

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 8330-LL-A								
Matrix: AQUEOUS								
QC Lot: 15 MAY 94-N1								
Concentration Units: ug/L								
HMX	2.50	2.31	2.29	2.30	92	58-131	0.9	27
RDX	2.50	2.04	1.83	1.94	77	67-149	11	26
1,3,5-Trinitrobenzene	2.50	2.52	2.82	2.67	107	44-140	11	23
1,3-Dinitrobenzene	2.50	1.89	2.00	1.94	78	41-110	5.7	30
Tetryl	12.5	5.23	5.58	5.40	43	1-104	6.5	38
Nitrobenzene	2.50	1.52	1.60	1.56	62	24- 80	5.1	50
2,4,6-Trinitrotoluene	12.5	5.61	6.08	5.84	47	1-113	8.0	22
4-Amino-2,6-dinitrotoluene	2.50	5.13	5.41	5.27	211	65-160	5.3	38 A
2-Amino-4,6-dinitrotoluene	2.50	2.03	2.11	2.07	83	50-121	3.9	35
2,6-Dinitrotoluene	2.50	1.95	2.06	2.00	80	39- 94	5.5	35
2,4-Dinitrotoluene	2.50	1.68	1.72	1.70	68	46-102	2.4	27
2-Nitrotoluene	2.50	1.34	1.33	1.34	53	23- 84	0.8	50
4-Nitrotoluene	2.50	1.48	1.47	1.48	59	26- 86	0.7	50
3-Nitrotoluene	2.50	1.57	1.55	1.56	62	23- 86	1.3	45
Category: 8330-LL-S								
Matrix: SOIL								
QC Lot: 16 MAY 94-N1								
Concentration Units: ug/g								
HMX	5.00	5.03	5.19	5.11	102	82-153	3.1	10
RDX	5.00	4.33	4.46	4.40	88	62-176	3.0	17
1,3,5-Trinitrobenzene	5.00	4.74	5.06	4.90	98	60-149	6.5	19
1,3-Dinitrobenzene	5.00	5.35	5.62	5.48	110	73-145	4.9	10
Tetryl	5.00	2.28	2.42	2.35	47	1-115	6.0	50
Nitrobenzene	5.00	5.01	5.04	5.02	101	73-135	0.6	10
2,4,6-Trinitrotoluene	5.00	4.82	4.80	4.81	96	1-160	0.4	15
4-Amino-2,6-dinitrotoluene	5.00	5.53	5.70	5.62	112	84-181	3.0	22
2-Amino-4,6-dinitrotoluene	5.00	4.41	4.56	4.48	90	82-140	3.3	14
2,6-Dinitrotoluene	5.00	5.36	5.57	5.46	109	85-120	3.8	10
2,4-Dinitrotoluene	5.00	4.64	4.85	4.74	95	78-133	4.4	10
2-Nitrotoluene	5.00	5.08	5.44	5.26	105	81-126	6.8	10
4-Nitrotoluene	5.00	5.08	5.41	5.24	105	79-125	6.3	10
3-Nitrotoluene	5.00	3.68	3.90	3.79	76	78-131	5.8	10

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

METHOD BLANK REPORT
Organics by Chromatography

Test: B330-COE-LL-A
Matrix: AQUEOUS
QC Lot: 15 MAY 94-N1 QC Run: 15 MAY 94-N1

Analyte	Result	Units	Reporting Limit
HMX	ND	ug/L	0.80
RDX	ND	ug/L	0.84
1,3,5-Trinitrobenzene	ND	ug/L	0.26
1,3-Dinitrobenzene	ND	ug/L	0.11
Tetryl	ND	ug/L	0.80
Nitrobenzene	ND	ug/L	0.25
2,4,6-Trinitrotoluene	ND	ug/L	0.11
4-Amino-2,6-dinitrotoluene	ND	ug/L	0.060
2-Amino-4,6-dinitrotoluene	ND	ug/L	0.035
2,6-Dinitrotoluene	ND	ug/L	0.31
2,4-Dinitrotoluene	ND	ug/L	0.020
2-Nitrotoluene	ND	ug/L	0.25
4-Nitrotoluene	ND	ug/L	0.25
3-Nitrotoluene	ND	ug/L	0.25

Test: B330-COE-LL-S
Matrix: SOIL
QC Lot: 16 MAY 94-N1 QC Run: 16 MAY 94-N1

HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035343-0001-SA	AQUEOUS	ICP-AT	17 MAY 94-6A	17 MAY 94-6A
035343-0001-SA	AQUEOUS	HG-CVAA-AT	24 MAY 94-6A	24 MAY 94-6A
035343-0002-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0002-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0003-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0003-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0004-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0004-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0005-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0005-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0006-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0006-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0007-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0007-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0008-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0008-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0009-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0009-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0010-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0010-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0011-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0011-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0012-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0012-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0013-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0013-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0014-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0014-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0015-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0015-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A
035343-0016-SA	SOIL	ICP-S	20 MAY 94-6A	20 MAY 94-6A
035343-0016-SA	SOIL	HG-CVAA-S	24 MAY 94-6A	24 MAY 94-6A

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DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 17 MAY 94-6A								
Concentration Units: mg/L								
Aluminum	2.00	1.77	1.80	1.79	89	80-116	1.6	10
Antimony	0.500	0.433	0.427	0.430	86	80-115	1.3	14
Arsenic	0.500	0.429	0.388	0.409	82	80-115	10	17
Barium	2.00	1.75	1.73	1.74	87	80-114	0.8	10
Beryllium	0.0500	0.0433	0.0426	0.0430	86	80-120	1.4	10
Cadmium	0.0500	0.0428	0.0432	0.0430	86	80-119	1.0	16
Calcium	100	83.8	83.5	83.6	84	80-114	0.4	10
Chromium	0.200	0.175	0.169	0.172	86	80-116	3.3	11
Cobalt	0.500	0.425	0.427	0.426	85	80-114	0.6	10
Copper	0.250	0.221	0.221	0.221	88	80-120	0.1	10
Iron	1.00	0.813	0.811	0.812	81	80-120	0.3	11
Lead	0.500	0.431	0.435	0.433	87	80-119	1.0	10
Magnesium	50.0	46.9	48.1	47.5	95	81-120	2.6	10
Manganese	0.500	0.432	0.429	0.431	86	80-116	0.6	10
Nickel	0.500	0.422	0.429	0.426	85	80-114	1.7	10
Potassium	50.0	41.9	41.9	41.9	84	80-120	0.0	13
Selenium	0.500	0.466	0.457	0.462	92	80-120	2.0	20
Silver	0.050	0.0418	0.0435	0.0427	85	80-119	4.1	15
Sodium	100	88.7	88.8	88.7	89	80-120	0.1	10
Thallium	0.500	0.419	0.498	0.458	92	80-120	17	20
Vanadium	0.500	0.407	0.404	0.405	81	80-116	0.8	10
Zinc	0.500	0.422	0.421	0.421	84	80-120	0.3	13
Category: HG-CVAA-AT								
Matrix: AQUEOUS								
QC Lot: 24 MAY 94-6A								
Concentration Units: mg/L								
Mercury	0.00100	0.00103	0.00105	0.00104	104	75-125	1.9	20
Category: ICP-S								
Matrix: SOIL								
QC Lot: 20 MAY 94-6A								
Concentration Units: mg/kg								
Aluminum	200	178	178	178	89	80-120	0.5	20
Antimony	50	43.9	45.4	44.7	89	80-120	3.3	20
Arsenic	50	45.7	47.2	46.4	93	80-120	3.3	20

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

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

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Average(%) Limits	Precision (RPD) DCS	Precision (RPD) Limit
Category: ICP-S								
Matrix: SOIL								
QC Lot: 20 MAY 94-6A								
Concentration Units: mg/kg								
Barium	200	194	194	194	97	80-120	0.2	20
Beryllium	5.0	4.81	4.76	4.79	96	80-120	0.9	20
Cadmium	5.0	4.48	4.25	4.37	87	80-120	5.3	20
Calcium	10000	9060	9170	9120	91	80-120	1.2	20
Chromium	20	18.5	18.6	18.5	93	80-120	0.2	20
Cobalt	50	45.7	46.2	46.0	92	80-120	1.1	20
Copper	25	24.2	24.1	24.1	96	80-120	0.4	20
Iron	100	83.5	82.8	83.2	83	80-120	0.8	20
Lead	50	45.2	44.6	44.9	90	80-120	1.4	20
Magnesium	5000	4610	4670	4640	93	80-120	1.3	20
Manganese	50	46.3	46.5	46.4	93	80-120	0.4	20
Nickel	50	45.4	46.0	45.7	91	80-120	1.2	20
Potassium	5000	4820	4770	4800	96	80-120	1.0	20
Silver	5	4.60	4.40	4.50	90	80-120	4.4	20
Sodium	10000	9830	9850	9840	98	80-120	0.2	20
Thallium	50	49.1	50.8	49.9	100	80-120	3.4	20
Vanadium	50	44.5	44.8	44.6	89	80-120	0.7	20
Zinc	50	44.3	44.5	44.4	89	80-120	0.6	20
Category: HG-CVAA-S								
Matrix: SOIL								
QC Lot: 24 MAY 94-6A								
Concentration Units: mg/kg								
Mercury	0.500	0.506	0.518	0.512	102	75-125	2.3	20

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

Enseco

METHOD BLANK REPORT
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-AT			
Matrix: AQUEOUS			
QC Lot: 17 MAY 94-6A QC Run: 17 MAY 94-6A			
Aluminum	ND	mg/L	0.20
Antimony	ND	mg/L	0.20
Arsenic	ND	mg/L	0.30
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Cadmium	ND	mg/L	0.0050
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Lead	ND	mg/L	0.20
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Selenium	ND	mg/L	0.40
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Thallium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010
Test: HG-CVAA-GLASS-AT			
Matrix: AQUEOUS			
QC Lot: 24 MAY 94-6A QC Run: 24 MAY 94-6A			
Mercury	ND	mg/L	0.00020
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6A QC Run: 20 MAY 94-6A			
Aluminum	ND	mg/kg	20.0
Antimony	ND	mg/kg	20.0
Arsenic	ND	mg/kg	30.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	0.20

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6A QC Run: 20 MAY 94-6A			
Cadmium	ND	mg/kg	2.0
Calcium	ND	mg/kg	500
Chromium	ND	mg/kg	4.0
Cobalt	ND	mg/kg	4.0
Copper	ND	mg/kg	3.0
Iron	ND	mg/kg	4.0
Lead	ND	mg/kg	20.0
Magnesium	ND	mg/kg	500
Manganese	ND	mg/kg	1.0
Molybdenum	ND	mg/kg	4.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Selenium	ND	mg/kg	40.0
Silver	ND	mg/kg	3.0
Sodium	ND	mg/kg	500
Thallium	ND	mg/kg	200
Vanadium	ND	mg/kg	4.0
Zinc	ND	mg/kg	1.0
Test: HG-CVAA-S			
Matrix: SOIL			
QC Lot: 24 MAY 94-6A QC Run: 24 MAY 94-6A			
Mercury	ND	mg/kg	0.10

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035343-0001-SA	AQUEOUS	S-A	15 MAY 94-6A	15 MAY 94-6A
035343-0002-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0003-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0004-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0005-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0006-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0007-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0008-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0009-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0010-SA	SOIL	S-S	24 MAY 94-M6	24 MAY 94-M6
035343-0011-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035343-0012-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035343-0013-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035343-0014-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035343-0015-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035343-0016-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: S-A Matrix: AQUEOUS QC Lot: 15 MAY 94-6A Concentration Units: mg/L								
Sulfide, Total	0.4270	0.369	0.409	0.389	91	80-120	10	20
Category: S-S Matrix: SOIL QC Lot: 24 MAY 94-M6 Concentration Units: mg/kg								
Sulfide, Total	100.0	73.7	65.8	69.8	70	0-120	11	200
Category: S-S Matrix: SOIL QC Lot: 26 MAY 94-M6 Concentration Units: mg/kg								
Sulfide, Total	100.0	66.0	60.9	63.4	63	0-120	8.0	200

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: S-SPEC-AT Matrix: AQUEOUS QC Lot: 15 MAY 94-6A QC Run: 15 MAY 94-6A			
Sulfide, Total	ND	mg/L	0.050
Test: STOT-SPEC-S Matrix: SOIL QC Lot: 24 MAY 94-M6 QC Run: 24 MAY 94-M6			
Sulfide, Total	ND	mg/kg	0.50
Test: STOT-SPEC-S Matrix: SOIL QC Lot: 26 MAY 94-M6 QC Run: 26 MAY 94-M6			
Sulfide, Total	ND	mg/kg	0.50

ENSECO ANALYTICAL SERVICES REQUEST FORM

33343 -1

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SS - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD150.1-2

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0810				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
WATER		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SULFIDES
METHOD:	SW3010/SW6010	SW7470	SW8330	SW9030
PARAMETER:	SEMI-VOC	GROSS ALPH & BETA		
METHOD:	SW3520/SW8270	SW9310		
PARAMETER:				
METHOD:				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 EQUIPMENT BLANK

Record 6

Total number of sample bottles for this request: 58

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-2

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

Sample identification

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Station ID or Unique Number*: OB/OD/502-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0830				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Frederick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SURFACE SAMPLE, SOIL

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-3

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/5,02-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0845				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SAMPLE COLLECTED FROM 5-6 FEET SOIL

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

-4

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1504-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0930				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Frederick S. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

ENSECO ANALYTICAL SERVICES REQUEST FORM

-5

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

Sample identification

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Station ID or Unique Number*: OB/OD15 05-1

Project Account #: 4 6 3 5 3 6 0 0 2

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1 9 9 4	0 5	0 8	1 0 0 0				N M	0 3 5	0 4 1

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

-6

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD601-1

Project Account #: 4635360002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1020				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick G. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SURFACE SOIL SAMPLE

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

RS-036

-7

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

Sample identification

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Station ID or Unique Number*: OB/OD1602-1

Project Account #: 463536002

Year*	Begin Date Month*	Begin Date Day*	Time*	Composite End Date Month	Composite End Date Day	Composite End Date Time	State Code*	District/ User Code*	County Code
1994	05	08	1115				NM	035	041

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 4-7 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-8

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1603-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1140				NM	035	041
Begin Date				Composite End Date					

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Judith E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature) J DeCl	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLETED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-1

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/604-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1220				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	800
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET.

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD170-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1245				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Judith S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature) K. Germann	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLETED AT SURFACE

Record 6 original COC not sent w/ samples - faxed ~~copies~~ copy received 5/13/94

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

ENSECO ANALYTICAL SERVICES REQUEST FORM

-10, 11

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
O - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD170.2-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1305				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
		5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5: SOIL SAMPLE COLLECTED AT 4-5 FEET

Record 6:

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-12

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
O - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD703-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1310				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDE
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J Reid	5-10-94	700
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 6 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytic
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-13

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1704-1

Project Account #: 4635360 02

Year*	Begin Date Month*	Begin Date Day*	Begin Date Time*	Composite End Date Month	Composite End Date Day	Composite End Date Time	State Code*	District/ User Code*	County Code
1994	05	08	1345				NM	035	041

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

T3-11

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/705-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1410				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-14-15

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/801-1

Project Account #: 4635360002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1435				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	700
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 COLLECT SOIL SAMPLE AT SURFACE

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-1D

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/001802-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1450				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Frederick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 5-6 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

Appendix II

Metals, sulfide, and semi-volatile data plus QA/QC soil samples OB/OD 1803 throughout OB/OD 1805 and OB/OD 03, OB/OD 04, and OB/OD 05

Enseco

ANALYTICAL RESULTS

FOR

U.S. GEOLOGICAL SURVEY

ENSECO-RMAL NO. 035366

JUNE 7, 1994

Reviewed by: Karen Germann

Karen Germann

Julieann L. Kramer

Julieann L. Kramer

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

I. OVERVIEW

On May 11, 1994, Enseco-Rocky Mountain Analytical Laboratory received 1 aqueous and 10 soil samples from the U.S. Geological Survey.

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:

I. Overview
II. Sample Description Information/Analytical Test Requests
III. Analytical Results
IV. Quality Control Report

The results for the Gross Alpha/Beta analyses associated with these samples have been reported in RMAL project 035756.

The analysis of samples 036366-0007MS/SD for semi-volatile organics by method 8270 showed the RPD's for 4-nitrophenol and 2,4-dinitrotoluene above QC limits. The associated DCS pair 17MAY94-N1 showed all percent recoveries and RPD's within QC limits.

The analysis of the DCS pair 23MAY94-N1 for explosives by method 8330 showed the percent recovery for 3-nitrotoluene outside QC limits. The associated MS/SD pair (samples 035366-0007MS/SD) showed all percent recoveries and RPD's within QC limits. No reportable target compounds were detected in any associated samples (035366-0002 through 0009 and 0007MS/SD).

The analysis of the DCS pair 16MAY94-N1 for explosives by method 8330 showed the percent recovery for 4-amino-2,6-dinitrotoluene outside QC limits. No reportable target compounds were detected in the associated sample (035366-0001).

With the exceptions as mentioned above, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

II. SAMPLE DESCRIPTION INFORMATION/ANALYTICAL TEST REQUESTS

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
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
035366-0001-EB	OB/OD1803-2	AQUEOUS	09 MAY 94	09:15	11 MAY 94
035366-0002-SA	OB/OD1804-1	SOIL	09 MAY 94	09:45	11 MAY 94
035366-0003-SA	OB/OD0306-1	SOIL	09 MAY 94	11:30	11 MAY 94
035366-0004-SA	OB/OD1805-1	SOIL	09 MAY 94	10:10	11 MAY 94
035366-0005-SA	OB/OD0403-1	SOIL	09 MAY 94	12:25	11 MAY 94
035366-0006-SA	OB/OD0404-1	SOIL	09 MAY 94	12:50	11 MAY 94
035366-0007-SA	OB/OD0503-1	SOIL	09 MAY 94	14:45	11 MAY 94
035366-0007-MS	OB/OD0504-1	SOIL	09 MAY 94	14:45	11 MAY 94
035366-0007-SD	OB/OD0504-1	SOIL	09 MAY 94	14:45	11 MAY 94
035366-0008-SA	OB/OD0505-1	SOIL	09 MAY 94	14:50	11 MAY 94
035366-0009-SA	OB/OD0506-1	SOIL	09 MAY 94	15:25	11 MAY 94

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 035366	Group Code	Analysis Description	Custom Test?
0001	A	Semivolatile Organics	N
		Prep - Semivolatile Organics by GC/MS	N
		Explosives by HPLC - Low Level	N
		Prep - Explosives by HPLC - Low Level	N
		Sulfide, Total	N
		ICP Suite: Air Force	N
		Prep - Total Metals, ICP	N
		Mercury, Cold Vapor AA (Total)	N
		Prep - Mercury, Cold Vapor AA (Total)	N
		Gross Alpha/Beta- Gas Proportional Counter	N
		Prep- Gross Alpha/Beta Gas Proportional Counter	N
		Semivolatiles Library Search (20 Compound TID)	N
0002 - 0009	B	Semivolatile Organics	N
		Prep-Semivolatile Organics	N
		Semivolatiles Library Search (20 Compound TID)	N
		Explosives by HPLC - Low Level	N
		Prep - Explosives by HPLC - Low Level	N
		Sulfide, Total	N
		ICP Suite: Air Force	N
		Prep - Total Metals, ICP	N
		Mercury, Cold Vapor AA	N
		Prep - Mercury, Cold Vapor AA	N
		Gross Alpha/Beta-Gas Proportional Counter	N
		Prep- Gross Alpha/Beta-Gas Proportional Counter	N
		Percent Water: ASTM D2216	N

III. 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. The date prepared is typically the date an extraction or digestion was initiated. For volatile organic compounds in water, the date prepared is the date the screening of the sample was performed.

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 3.5, May, 1992.

In addition, surrogate recovery data is presented for all GC/MS analyses. The surrogate recovery is an indication of the affect of the sample matrix on the performance of the method. The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is given in Section IV.

The analytical data reported are subject to the following limitations of the analytical methodology:

Volatile Organics

a) Due to the chemical nature of ethanol, this component cannot be consistently recovered using EPA Method 624 or 8240. This component is reported with a NR (Not Recoverable) in place of a reporting limit.

b) Methylene chloride and acetone are common laboratory contaminants in GC/MS analysis. We have programs in place to minimize contamination, occasionally these compounds will be found at low levels in samples.

Semivolatile Organics

a) Benzo(b) and benzo(k) fluoranthene cannot be differentiated based on their mass spectra; retention times are almost identical. The isomer which is the closest in retention time to the sample is reported.

b) 1,2-diphenylhydrazine is measured as azobenzene.

c) Diphenylamine cannot be distinguished from N-nitrosodiphenylamine.

d) 3-Methyl phenol and 4-methyl phenol cannot be differentiated because their mass spectra and retention times are almost identical. Results are reported as 3/4-methyl phenol (or m&p-cresols).

e) Several Appendix IX and Refinery List compounds are not consistently recovered using Method 8270, and reporting limits cannot be established. These compounds include: dimethoate, famphur, hexachlorophene, 4-nitroquinoline-1-oxide, 4-phenylenedianine, and benzenethiol.

f) Two Refinery List compounds, pyridine and quinoline, are not recovered after alumina column cleanup.

g) Bis-2-(ethyl)hexyl-phthalate is a common laboratory contaminant in GC/MS analysis. We have programs in place to minimize this contamination, occasionally these compounds will be found at low levels in samples.

Tentatively Identified Compounds

This report presents results for the "identification" of unknown compounds that were detected in the GC/MS analysis. The results from this work are presented as "tentatively identified compounds" (TIC). The approach used for reporting TICs was based on the protocol established for this purpose in the EPA Superfund methods and on guidelines established by the American Chemical Society (ACS).

In summary, the mass spectrum of chromatographic peaks in concentrations in excess of 10% of the internal standard were obtained. Normally, the number of unknown compounds identified is limited to 10 compounds in the volatile fraction and 20 compounds in the semivolatile fraction. Each mass spectrum was then compared to a library of over 30,000 reference spectra in a computerized "library search." The three "best" matches obtained by the computer were hardcopied along with the mass spectrum of the unknown peak. This information was then reviewed by an analyst who "identified" the compound based on the available information.

All identifications were based on the "Guidelines for GC/MS Identification" developed by the American Chemical Society (Environmental Science and Technology, 1982, 16 143A). As recommended in these guidelines, identifications of unknown substances were reported with a level of confidence. The three levels of confidence cited in the ACS guidelines and used in this report are as follows:

Level 3: Confirmed Identification

The identification is based on the analysis of an authentic standard.

Level 2: Confident Identification

Good agreement was observed between the unknown compound and a specific library spectrum.

Level 1: Tentative Identification

The unknown compound is only indicative of a specific library spectrum.

Class Identification

The unknown compound was not similar to a specific library spectrum, but it did contain ions characteristic of a class of compounds (saturated hydrocarbon, chlorinated hydrocarbon, etc.).

If there were no library spectra similar to the unknown, and it could not be assigned to a particular class of compounds, the compound is reported as "unknown."

Quantitation of TICs is based on the total ionization peak area relative to an internal standard, assuming a response factor of one. Accordingly, the reported concentration is an estimate.

In general, mass spectrometry cannot distinguish isomers (compounds with the same molecular formula). Therefore, an identified compound may be any one of several different isomers.

The tentatively identified compounds in this report include some compounds reported as "siloxanes". Siloxanes are common laboratory and field artifacts or contaminants. Potential sources include silicon-based grease in the field or laboratory plus the liquid phase coating on gas chromatography columns, as well as other equipment in the laboratory. However, siloxanes may be present in environmental samples from spills of silicone oils or lubricating oils with siloxane additives.

Metals

All nominal reporting limits for metals have been established from instrument detection limit (IDL) evaluations and represent the level above which reliable data can be routinely obtained. Low level standards are analyzed seven times on three non-consecutive days on each instrument. The standard deviations of the three runs are summed to yield the IDL. Nominal reporting limits are generally 2-5 times the IDL (consistent with the American Chemical Society definition for the Limit of Quantification). The ability to achieve these quoted reporting limits is verified each quarter. Reporting limits above the nominal levels are often submitted due to matrix interferences or elevated analyte levels.

Reporting limits for metals analyzed by Inductively Coupled Plasma (ICP) are typically raised only for dilution due to an analyte exceeding the instrument linear range. Background and interelement interferences are corrected automatically and do not require dilution.

Metals analyzed by Graphite Furnace Atomic Absorption (GFAA) are subject to matrix interferences. Consequently, Enseco protocol is to analyze a spiked aliquot with every sample. The severity of the interference, based upon analyte level and spike recovery, is assessed against specific criteria and the need for an elevated reporting limit or dilution is determined.

The analysis of mercury by Cold Vapor Atomic Absorption (CVAA) is generally free from matrix interferences. As with ICP, reporting limits are raised only for dilution due to a sample concentration exceeding the linear range of the instrument.

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 14 MAY 94

Received: 11 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	5.0
1,4-Dichlorobenzene	ND	ug/L	5.0
1,2-Dichlorobenzene	ND	ug/L	5.0
bis(2-Chloroisopropyl) ether	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Nitrobenzene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
bis(2-Chloroethoxy) methane	ND	ug/L	10
2,4-Dichlorophenol	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
Naphthalene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	10
2,4,6-Trichlorophenol	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2-Chloronaphthalene	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acenaphthene	ND	ug/L	10
2,4-Dinitrophenol	ND	ug/L	50
4-Nitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Diethyl phthalate	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Fluorene	ND	ug/L	10
4,6-Dinitro-2-methylphenol	ND	ug/L	50
4-Bromophenyl phenyl ether	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 14 MAY 94

Received: 11 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	ug/L	30
Phenanthrene	ND	ug/L	10
Anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Pyrene	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	30
Benzo(a)anthracene	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Acetophenone	ND	ug/L	50
Aniline	ND	ug/L	50
4-Aminobiphenyl	ND	ug/L	50
Benzidine	ND	ug/L	170
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Chloroaniline	ND	ug/L	20
Dibenz(a,j)acridine	ND	ug/L	--
Dibenzofuran	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	50
7,12-Dimethylbenz(a)-anthracene	ND	ug/L	50
a,a-Dimethylphenethylamine	ND	ug/L	--
Diphenylamine	ND	ug/L	50
1,2-Diphenylhydrazine	ND	ug/L	50
Ethyl methanesulfonate	ND	ug/L	50
3-Methylcholanthrene	ND	ug/L	50
Methyl methanesulfonate	ND	ug/L	50
2-Methylnaphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	50
2-Naphthylamine	ND	ug/L	50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 14 MAY 94

Received: 11 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	58
Pentachlorobenzene	ND	ug/L	50
Pentachloronitrobenzene	ND	ug/L	50
Phenacetin	ND	ug/L	50
2-Picoline	ND	ug/L	50
1,2,4,5-Tetrachlorobenzene	ND	ug/L	50
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	50
N-Nitrosodimethylamine	ND	ug/L	50
N-Nitrosopiperidine	ND	ug/L	50
2,6-Dichlorophenol	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	50
Pronamide	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	82	%
2-Fluorobiphenyl	71	%
Terphenyl-d14	82	%
Phenol-d5	73	%
2-Fluorophenol	71	%
2,4,6-Tribromophenol	80	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 23 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	
None Detected	ND	ug/L	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	70	%
2-Fluorobiphenyl	70	%
Terphenyl-d14	74	%
Phenol-d5	72	%
2-Fluorophenol	69	%
2,4,6-Tribromophenol	60	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	81	%
2-Fluorobiphenyl	77	%
Terphenyl-d14	102	%
Phenol-d5	78	%
2-Fluorophenol	79	%
2,4,6-Tribromophenol	62	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 26 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,4-dimethyl-, cis-	0.17	mg/kg		2
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	66	%
2-Fluorobiphenyl	71	%
Terphenyl-d14	90	%
Phenol-d5	71	%
2-Fluorophenol	68	%
2,4,6-Tribromophenol	63	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	2.5
Hexachlorocyclopentadiene	ND	mg/kg	0.50
			0.50

Surrogate	Recovery	
Nitrobenzene-d5	72	%
2-Fluorobiphenyl	75	%
Terphenyl-d14	90	%
Phenol-d5	76	%
2-Fluorophenol	74	%
2,4,6-Tribromophenol	60	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 25 MAY 94

Parameter	Result	Units	Reporting Limit	
Cyclohexane, 1,3-dimethyl-, cis-	0.18	mg/kg		2
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		
None Detected	ND	mg/kg		

Note 2 : Confident Identification

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethyl-amine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	74	%
2-Fluorobiphenyl	74	%
Terphenyl-d14	74	%
Phenol-d5	79	%
2-Fluorophenol	74	%
2,4,6-Tribromophenol	61	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Oxygenated Hydrocarbon	0.17	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 17 MAY 94

Received: 11 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	85	%
2-Fluorobiphenyl	80	%
Terphenyl-d14	92	%
Phenol-d5	80	%
2-Fluorophenol	81	%
2,4,6-Tribromophenol	80	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	80	%
2-Fluorobiphenyl	82	%
Terphenyl-d14	83	%
Phenol-d5	86	%
2-Fluorophenol	81	%
2,4,6-Tribromophenol	72	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
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None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatile Organics (CONT.)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 18 MAY 94

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Surrogate	Recovery	
Nitrobenzene-d5	70	%
2-Fluorobiphenyl	72	%
Terphenyl-d14	79	%
Phenol-d5	76	%
2-Fluorophenol	72	%
2,4,6-Tribromophenol	65	%

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Semivolatiles Library Search (20 Compound TID)

Method 8270

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: NA

Received: 11 MAY 94
Analyzed: 27 MAY 94

Parameter	Result	Units	Reporting Limit
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	
None Detected	ND	mg/kg	

ND = Not detected
NA = Not applicable

Reported By: Dan Albritton

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 16 MAY 94

Received: 11 MAY 94
Analyzed: 24 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	0.80
RDX	ND	ug/L	0.84
1,3,5-Trinitrobenzene	ND	ug/L	0.26
1,3-Dinitrobenzene	ND	ug/L	0.11
Tetryl	ND	ug/L	0.80
Nitrobenzene	ND	ug/L	0.25
2,4,6-Trinitrotoluene	ND	ug/L	0.11
4-Amino-2,6-dinitrotoluene	ND	ug/L	0.060
2-Amino-4,6-dinitrotoluene	ND	ug/L	0.035
2,6-Dinitrotoluene	ND	ug/L	0.31
2,4-Dinitrotoluene	ND	ug/L	0.020
2-Nitrotoluene	ND	ug/L	0.25
4-Nitrotoluene	ND	ug/L	0.25
3-Nitrotoluene	ND	ug/L	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Philip Tallarico

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Explosives by HPLC - Low Level

Method 8330

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: 23 MAY 94

Received: 11 MAY 94
Analyzed: 28 MAY 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

ND = Not detected
NA = Not applicable

Reported By: Blake Besser

Approved By: Mark Pokorny

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.20	6010	21 MAY 94	22 MAY 94
Antimony	ND	mg/L	0.20	6010	21 MAY 94	22 MAY 94
Arsenic	ND	mg/L	0.30	6010	21 MAY 94	22 MAY 94
Barium	ND	mg/L	0.10	6010	21 MAY 94	22 MAY 94
Beryllium	ND	mg/L	0.0020	6010	21 MAY 94	22 MAY 94
Cadmium	ND	mg/L	0.0050	6010	21 MAY 94	22 MAY 94
Calcium	ND	mg/L	5.0	6010	21 MAY 94	22 MAY 94
Chromium	ND	mg/L	0.030	6010	21 MAY 94	22 MAY 94
Cobalt	ND	mg/L	0.040	6010	21 MAY 94	22 MAY 94
Copper	ND	mg/L	0.030	6010	21 MAY 94	22 MAY 94
Iron	ND	mg/L	0.040	6010	21 MAY 94	22 MAY 94
Lead	ND	mg/L	0.20	6010	21 MAY 94	22 MAY 94
Magnesium	ND	mg/L	5.0	6010	21 MAY 94	22 MAY 94
Manganese	ND	mg/L	0.010	6010	21 MAY 94	22 MAY 94
Mercury	ND	mg/L	0.00020	7470	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/L	0.040	6010	21 MAY 94	22 MAY 94
Nickel	ND	mg/L	0.040	6010	21 MAY 94	22 MAY 94
Potassium	ND	mg/L	5.0	6010	21 MAY 94	22 MAY 94
Selenium	ND	mg/L	0.40	6010	21 MAY 94	22 MAY 94
Silver	ND	mg/L	0.030	6010	21 MAY 94	22 MAY 94
Sodium	ND	mg/L	5.0	6010	21 MAY 94	22 MAY 94
Thallium	ND	mg/L	5.0	6010	21 MAY 94	22 MAY 94
Vanadium	ND	mg/L	0.040	6010	21 MAY 94	22 MAY 94
Zinc	ND	mg/L	0.010	6010	21 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8670	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	356	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.40	mg/kg	0.40	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	120000	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	4.0	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Iron	6380	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3300	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	82.4	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	ND	mg/kg	8.0	6010	20 MAY 94	22 MAY 94
Potassium	1690	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	1000	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	400	6010	20 MAY 94	22 MAY 94
Vanadium	19.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	15.3	mg/kg	2.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	11900	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	179	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.52	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	55600	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	9.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.2	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	9090	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3900	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	130	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	12.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2470	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	24.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	21.4	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8730	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	78.1	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.44	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	47300	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	6.8	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	5.1	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7210	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3390	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	142	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	8.2	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1840	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	23.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	16.7	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8300	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	127	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.42	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	71800	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	5.9	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	5.1	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	6810	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	2960	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	117	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	11.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1780	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	19.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	16.7	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9760	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	566	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.50	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	75500	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.4	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	4.9	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7550	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3550	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	131	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	39.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	1980	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	22.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	18.8	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9960	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	221	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.47	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	55400	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	8.1	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.5	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	8020	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3290	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	131	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	14.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2120	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	20.6	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	20.2	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9600	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	234	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.50	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	49500	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.5	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	6.5	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	7850	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3110	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	135	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	14.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2090	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	20.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	19.2	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

Metals

Total Metals

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9550	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Antimony	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Arsenic	ND	mg/kg	30.0	6010	20 MAY 94	22 MAY 94
Barium	154	mg/kg	10.0	6010	20 MAY 94	22 MAY 94
Beryllium	0.56	mg/kg	0.20	6010	20 MAY 94	22 MAY 94
Cadmium	ND	mg/kg	2.0	6010	20 MAY 94	22 MAY 94
Calcium	63500	mg/kg	500	6010	20 MAY 94	22 MAY 94
Chromium	7.7	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Cobalt	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Copper	5.5	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Iron	8020	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Lead	ND	mg/kg	20.0	6010	20 MAY 94	22 MAY 94
Magnesium	3850	mg/kg	500	6010	20 MAY 94	22 MAY 94
Manganese	143	mg/kg	1.0	6010	20 MAY 94	22 MAY 94
Mercury	ND	mg/kg	0.10	7471	24 MAY 94	25 MAY 94
Molybdenum	ND	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Nickel	16.3	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Potassium	2020	mg/kg	500	6010	20 MAY 94	22 MAY 94
Selenium	ND	mg/kg	40.0	6010	20 MAY 94	22 MAY 94
Silver	ND	mg/kg	3.0	6010	20 MAY 94	22 MAY 94
Sodium	ND	mg/kg	500	6010	20 MAY 94	22 MAY 94
Thallium	ND	mg/kg	200	6010	20 MAY 94	22 MAY 94
Vanadium	25.1	mg/kg	4.0	6010	20 MAY 94	22 MAY 94
Zinc	19.0	mg/kg	1.0	6010	20 MAY 94	22 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Doug Gomer

Approved By: Dave Roberts

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035366-0001-EB
Matrix: AQUEOUS
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/L	0.050	376.2	NA	15 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Scott McPhail

Approved By: Dave Roberts

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035366-0002-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	10	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035366-0003-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	6.3	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035366-0004-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	8.0	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035366-0005-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.2	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035366-0006-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.4	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035366-0007-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.5	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035366-0008-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.6	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

Enseco

General Inorganics

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035366-0009-SA
Matrix: SOIL
Authorized: 11 MAY 94

Sampled: 09 MAY 94
Prepared: See Below

Received: 11 MAY 94
Analyzed: See Below

Parameter	Result	Wet wt. Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Sulfide, Total	ND	mg/kg	0.50	376.2 Mod.	NA	27 MAY 94
Water	5.9	%	0.10	D2216	NA	21 MAY 94

ND = Not detected
NA = Not applicable

Reported By: Joe Stutz

Approved By: Doug Gomer

IV. QUALITY CONTROL REPORT

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.

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 surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

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
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035366-0001-EB	AQUEOUS	625-A	14 MAY 94-N1	14 MAY 94-N1
035366-0002-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0003-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0004-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0005-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0006-SA	SOIL	8270-S	18 MAY 94-N1	18 MAY 94-N1
035366-0007-SA	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0007-MS	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0007-SD	SOIL	8270-S	17 MAY 94-N1	17 MAY 94-N1
035366-0008-SA	SOIL	8270-S	18 MAY 94-N1	18 MAY 94-N1
035366-0009-SA	SOIL	8270-S	18 MAY 94-N1	18 MAY 94-N1

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 625-A								
Matrix: AQUEOUS								
QC Lot: 14 MAY 94-N1								
Concentration Units: ug/L								
Phenol	100	74.0	70.9	72.4	72	45-109	4.3	29
2-Chlorophenol	100	86.0	80.0	83.0	83	47-111	7.2	29
1,4-Dichlorobenzene	50	34.7	31.9	33.3	67	32-103	8.4	28
N-Nitroso-di-n-propylamine	50	39.7	37.0	38.4	77	49-107	7.0	24
1,2,4-Trichlorobenzene	50	35.3	31.3	33.3	67	33-102	12	27
4-Chloro-3-methylphenol	100	89.1	82.4	85.8	86	50-115	7.8	27
Acenaphthene	50	40.1	37.0	38.6	77	47-109	8.0	24
4-Nitrophenol	100	94.2	94.0	94.1	94	40-127	0.2	51
2,4-Dinitrotoluene	50	40.9	38.4	39.6	79	46-118	6.3	22
Pentachlorophenol	100	95.1	83.0	89.0	89	30-136	14	34
Pyrene	50	43.9	39.3	41.6	83	42-129	11	23
Category: 8270-S								
Matrix: SOIL								
QC Lot: 17 MAY 94-N1								
Concentration Units: ug/kg								
Phenol	6670	4030	4290	4160	62	45-107	6.2	19
2-Chlorophenol	6670	4740	4960	4850	73	46-112	4.5	17
1,4-Dichlorobenzene	3330	2340	2490	2420	73	58-101	6.2	22
N-Nitroso-di-n-propylamine	3330	2410	2510	2460	74	58-101	4.1	18
1,2,4-Trichlorobenzene	3330	2490	2640	2560	77	59-103	5.8	24
4-Chloro-3-methylphenol	6670	5120	5320	5220	78	41-123	3.8	16
Acenaphthene	3330	2460	2490	2480	74	54-110	1.2	15
4-Nitrophenol	6670	5340	5500	5420	81	30-145	3.0	22
2,4-Dinitrotoluene	3330	2660	2720	2690	81	51-117	2.2	17
Pentachlorophenol	6670	5350	5440	5400	81	32-130	1.7	29
Pyrene	3330	2620	3060	2840	85	31-142	15	20
Category: 8270-S								
Matrix: SOIL								
QC Lot: 18 MAY 94-N1								
Concentration Units: ug/kg								
Phenol	6670	4710	4400	4560	68	45-107	6.8	19
2-Chlorophenol	6670	5290	4860	5080	76	46-112	8.5	17

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

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS (cont.)

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: 8270-S								
Matrix: SOIL								
QC Lot: 18 MAY 94-N1								
Concentration Units: ug/kg								
1,4-Dichlorobenzene	3330	2720	2570	2640	79	58-101	5.7	22
N-Nitroso-di-n-propylamine	3330	2740	2600	2670	80	58-101	5.2	18
1,2,4-Trichlorobenzene	3330	2670	2620	2640	79	59-103	1.9	24
4-Chloro-3-methylphenol	6670	5330	5130	5230	78	41-123	3.8	16
Acenaphthene	3330	2540	2500	2520	76	54-110	1.6	15
4-Nitrophenol	6670	6010	5730	5870	88	30-145	4.8	22
2,4-Dinitrotoluene	3330	2740	2710	2720	82	51-117	1.1	17
Pentachlorophenol	6670	5310	5230	5270	79	32-130	1.5	29
Pyrene	3330	3020	2630	2820	85	31-142	14	20

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

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: 625-A				
Matrix: AQUEOUS				
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1				
Concentration Units: ug/L				
Nitrobenzene-d5	100	86.0	86	49-113
2-Fluorobiphenyl	100	75.9	76	42-104
Terphenyl-d14	100	89.2	89	29-139
2-Fluorophenol	200	153	76	44-106
Phenol-d5	200	156	78	50-109
2,4,6-Tribromophenol	200	162	81	33-125
Category: 8270-S				
Matrix: SOIL				
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1				
Concentration Units: ug/kg				
Nitrobenzene-d5	1670	1460	87	62-110
2-Fluorobiphenyl	1670	1410	84	61-114
Terphenyl-d14	1670	1660	99	49-147
2-Fluorophenol	3330	2710	81	60-115
Phenol-d5	3330	2780	83	61-111
2,4,6-Tribromophenol	3330	2390	72	44-110
Category: 8270-S				
Matrix: SOIL				
QC Lot: 18 MAY 94-N1 QC Run: 18 MAY 94-N1				
Concentration Units: ug/kg				
Nitrobenzene-d5	1670	1250	75	62-110
2-Fluorobiphenyl	1670	1350	81	61-114
Terphenyl-d14	1670	1580	95	49-147
2-Fluorophenol	3330	2330	70	60-115
Phenol-d5	3330	2490	75	61-111
2,4,6-Tribromophenol	3330	2200	66	44-110

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

METHOD BLANK REPORT
Semivolatile Organics by GC/MS

Test: 625-AFIR-A
Matrix: AQUEOUS
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Phenol	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	5.0
1,4-Dichlorobenzene	ND	ug/L	5.0
1,2-Dichlorobenzene	ND	ug/L	5.0
bis(2-Chloroisopropyl) ether	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Nitrobenzene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
bis(2-Chloroethoxy) methane	ND	ug/L	10
2,4-Dichlorophenol	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
Naphthalene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	10
2,4,6-Trichlorophenol	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2-Chloronaphthalene	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Acenaphthene	ND	ug/L	10
2,4-Dinitrophenol	ND	ug/L	50
4-Nitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Diethyl phthalate	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Fluorene	ND	ug/L	10
4,6-Dinitro-2-methylphenol	ND	ug/L	50
4-Bromophenyl phenyl ether	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10

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

Test: 625-AFIR-A
Matrix: AQUEOUS
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Pentachlorophenol	ND	ug/L	30
Phenanthrene	ND	ug/L	10
Anthracene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Pyrene	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	30
Benzo(a)anthracene	ND	ug/L	10
bis(2-Ethylhexyl) phthalate	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Acetophenone	ND	ug/L	50
Aniline	ND	ug/L	50
4-Aminobiphenyl	ND	ug/L	50
Benzidine	ND	ug/L	170
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Chloroaniline	ND	ug/L	20
Dibenz(a,j)acridine	ND	ug/L	--
Dibenzofuran	ND	ug/L	10
p-Dimethylaminoazobenzene	ND	ug/L	50
7,12-Dimethylbenz(a)-anthracene	ND	ug/L	50
a,a-Dimethylphenethylamine	ND	ug/L	--
Diphenylamine	ND	ug/L	50
1,2-Diphenylhydrazine	ND	ug/L	50
Ethyl methanesulfonate	ND	ug/L	50
3-Methylcholanthrene	ND	ug/L	50
Methyl methanesulfonate	ND	ug/L	50
2-Methylnaphthalene	ND	ug/L	10
1-Naphthylamine	ND	ug/L	50
2-Naphthylamine	ND	ug/L	50

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

Analyte	Result	Units	Reporting Limit
Test: 625-AFIR-A			
Matrix: AQUEOUS			
QC Lot: 14 MAY 94-N1 QC Run: 14 MAY 94-N1			
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	58
Pentachlorobenzene	ND	ug/L	50
Pentachloronitrobenzene	ND	ug/L	50
Phenacetin	ND	ug/L	50
2-Picoline	ND	ug/L	50
1,2,4,5-Tetrachlorobenzene	ND	ug/L	50
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
2,3,4,6-Tetrachlorophenol	ND	ug/L	50
N-Nitroso-di-n-butylamine	ND	ug/L	50
N-Nitrosodimethylamine	ND	ug/L	50
N-Nitrosopiperidine	ND	ug/L	50
2,6-Dichlorophenol	ND	ug/L	50
1-Chloronaphthalene	ND	ug/L	50
Pronamide	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Test: 8270-AFIR-S			
Matrix: SOIL			
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1			
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	0.50
Butyl benzyl phthalate	ND	mg/kg	2.5
3,3'-Dichlorobenzidine	ND	mg/kg	0.50
Benzo(a)anthracene	ND	mg/kg	1.0
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50

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

Test: B270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachlorobenzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 18 MAY 94-N1 QC Run: 18 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	1.5
2,4,5-Trichlorophenol	ND	mg/kg	0.50
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	1.5
2,4-Dinitrophenol	ND	mg/kg	2.5
4-Nitrophenol			

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 18 MAY 94-N1 QC Run: 18 MAY 94-N1

Analyte	Result	Units	Reporting Limit
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5

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

Analyte	Result	Units	Reporting Limit
Test: 8270-AFIR-S			
Matrix: SOIL			
QC Lot: 18 MAY 94-N1 QC Run: 18 MAY 94-N1			
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachlorobenzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	0.50
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	2.5
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	0.50
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50
Test: 8270-AFIR-S			
Matrix: SOIL			
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1			
Phenol	ND	mg/kg	0.50
bis(2-Chloroethyl) ether	ND	mg/kg	0.50
2-Chlorophenol	ND	mg/kg	0.50
1,3-Dichlorobenzene	ND	mg/kg	0.50
1,4-Dichlorobenzene	ND	mg/kg	0.50

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
1,2-Dichlorobenzene	ND	mg/kg	0.50
bis(2-Chloroisopropyl) ether	ND	mg/kg	0.50
N-Nitroso-di-n-propylamine	ND	mg/kg	0.50
Hexachloroethane	ND	mg/kg	0.50
Nitrobenzene	ND	mg/kg	0.50
Isophorone	ND	mg/kg	0.50
2-Nitrophenol	ND	mg/kg	0.50
2,4-Dimethylphenol	ND	mg/kg	0.50
bis(2-Chloroethoxy) methane	ND	mg/kg	0.50
2,4-Dichlorophenol	ND	mg/kg	0.50
1,2,4-Trichlorobenzene	ND	mg/kg	0.50
Naphthalene	ND	mg/kg	0.50
Hexachlorobutadiene	ND	mg/kg	0.50
4-Chloro-3-methylphenol	ND	mg/kg	0.50
2,4,6-Trichlorophenol	ND	mg/kg	0.50
2,4,5-Trichlorophenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.50
Dimethyl phthalate	ND	mg/kg	0.50
Acenaphthylene	ND	mg/kg	0.50
Acenaphthene	ND	mg/kg	0.50
2,4-Dinitrophenol	ND	mg/kg	1.5
4-Nitrophenol	ND	mg/kg	2.5
2,4-Dinitrotoluene	ND	mg/kg	0.50
2,6-Dinitrotoluene	ND	mg/kg	0.50
Diethyl phthalate	ND	mg/kg	0.50
4-Chlorophenyl phenyl ether	ND	mg/kg	0.50
Fluorene	ND	mg/kg	0.50
4,6-Dinitro-2-methylphenol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.50
Hexachlorobenzene	ND	mg/kg	0.50
Pentachlorophenol	ND	mg/kg	1.5
Phenanthrene	ND	mg/kg	0.50
Anthracene	ND	mg/kg	0.50
Di-n-butyl phthalate	ND	mg/kg	0.50
Fluoranthene	ND	mg/kg	0.50

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
Pyrene	ND	mg/kg	2.5
Butyl benzyl phthalate	ND	mg/kg	0.50
3,3'-Dichlorobenzidine	ND	mg/kg	1.0
Benzo(a)anthracene	ND	mg/kg	0.50
bis(2-Ethylhexyl) phthalate	ND	mg/kg	0.50
Chrysene	ND	mg/kg	0.50
Di-n-octyl phthalate	ND	mg/kg	0.50
Benzo(b)fluoranthene	ND	mg/kg	0.50
Benzo(k)fluoranthene	ND	mg/kg	0.50
Benzo(a)pyrene	ND	mg/kg	0.50
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.50
Dibenz(a,h)anthracene	ND	mg/kg	0.50
Benzo(g,h,i)perylene	ND	mg/kg	0.50
Acetophenone	ND	mg/kg	2.5
Aniline	ND	mg/kg	2.5
4-Aminobiphenyl	ND	mg/kg	2.5
Benzidine	ND	mg/kg	5.6
Benzoic acid	ND	mg/kg	2.5
Benzyl alcohol	ND	mg/kg	1.0
4-Chloroaniline	ND	mg/kg	1.0
Dibenz(a,j)acridine	ND	mg/kg	--
Dibenzofuran	ND	mg/kg	0.50
p-Dimethylaminoazobenzene	ND	mg/kg	2.5
7,12-Dimethylbenz(a)-anthracene	ND	mg/kg	2.5
a,a-Dimethylphenethylamine	ND	mg/kg	--
Diphenylamine	ND	mg/kg	2.5
1,2-Diphenylhydrazine	ND	mg/kg	2.5
Ethyl methanesulfonate	ND	mg/kg	2.5
Methyl methanesulfonate	ND	mg/kg	2.5
2-Methylnaphthalene	ND	mg/kg	0.50
1-Naphthylamine	ND	mg/kg	2.5
2-Naphthylamine	ND	mg/kg	2.5
2-Nitroaniline	ND	mg/kg	2.5
3-Nitroaniline	ND	mg/kg	2.5
4-Nitroaniline	ND	mg/kg	2.5
Pentachlorobenzene	ND	mg/kg	2.5
Pentachloronitrobenzene	ND	mg/kg	2.5
Phenacetin	ND	mg/kg	2.5

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

Test: 8270-AFIR-S
Matrix: SOIL
QC Lot: 17 MAY 94-N1 QC Run: 17 MAY 94-N1

Analyte	Result	Units	Reporting Limit
2-Picoline	ND	mg/kg	2.5
Pronamide	ND	mg/kg	2.5
1,2,4,5-Tetrachloro-benzene	ND	mg/kg	2.5
2,6-Dichlorophenol	ND	mg/kg	2.5
2-Methylphenol	ND	mg/kg	0.50
4-Methylphenol	ND	mg/kg	0.50
2,3,4,6-Tetrachlorophenol	ND	mg/kg	2.5
N-Nitroso-di-n-butylamine	ND	mg/kg	2.5
N-Nitrosodimethylamine	ND	mg/kg	2.5
N-Nitrosopiperidine	ND	mg/kg	2.5
1-Chloronaphthalene	ND	mg/kg	2.5
3-Methylcholanthrene	ND	mg/kg	2.5
N-Nitrosodiphenylamine	ND	mg/kg	0.50
Hexachlorocyclopentadiene	ND	mg/kg	0.50

MATRIX SPECIFIC QC
ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8270-AFIR-S	035366-0007-SD	17 MAY 94-N1
MATRIX SPIKE	8270-AFIR-S	035366-0007-MS	17 MAY 94-N1

Enseco

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT
Semivolatile Organics by GC/MS

Analyte	Sample	Concentration Matrix Spike	Matrix Spike Dup	Spiked MS	Spiked MSD	%Recovery MS	%Recovery MSD	% RPD
Test: 8270-AFIR-S Matrix SOIL Sample: 035366-0007 Units: mg/kg								
Phenol	ND	3900	4300	6700	6700	59	65	10
2-Chlorophenol	ND	4400	4800	6700	6700	67	72	8
1,4-Dichlorobenzene	ND	2300	2400	3300	3300	68	72	5
N-Nitroso-di-n-propylamine	ND	2300	2500	3300	3300	69	74	7
1,2,4-Trichlorobenzene	ND	2500	2600	3300	3300	75	80	6
4-Chloro-3-methylphenol	ND	4900	5600	6700	6700	73	84	14
Acenaphthene	ND	2300	2500	3300	3300	68	76	12
4-Nitrophenol	ND	4500	6400	6700	6700	67	97	36
2,4-Dinitrotoluene	ND	2200	2800	3300	3300	66	85	25
Pentachlorophenol	ND	4200	5400	6700	6700	63	80	25
Pyrene	ND	2400	3000	3300	3300	73	89	20

ND = Not detected
NC = Not calculated, calculation not applicable

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

QC LOT ASSIGNMENT REPORT
Organics by Chromatography

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035366-0001-EB	AQUEOUS	8330-LL-A	16 MAY 94-N1	16 MAY 94-N1
035366-0002-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0003-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0004-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0005-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0006-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0007-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0007-MS	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0007-SD	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0008-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1
035366-0009-SA	SOIL	8330-LL-S	23 MAY 94-N1	23 MAY 94-N1

Enseco

DUPLICATE CONTROL SAMPLE REPORT
Organics by Chromatography

Category: 8330-LL-A
Matrix: AQUEOUS
QC Lot: 16 MAY 94-N1
Concentration Units: ug/L

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
HMX	2.50	2.39	2.17	2.28	91	58-131	9.6	27
RDX	2.50	2.00	1.73	1.86	75	67-149	14	26
1,3,5-Trinitrobenzene	2.50	2.67	2.42	2.54	102	44-140	9.8	23
1,3-Dinitrobenzene	2.50	1.88	1.86	1.87	75	41-110	1.1	30
Tetryl	12.5	5.80	5.21	5.50	44	1-104	11	38
Nitrobenzene	2.50	1.39	1.49	1.44	58	24- 80	6.9	50
2,4,6-Trinitrotoluene	12.5	5.96	5.29	5.62	high 45	1-113	12	22
4-Amino-2,6-dinitrotoluene	2.50	5.05	4.99	5.02	201	65-160	1.2	38
2-Amino-4,6-dinitrotoluene	2.50	2.08	1.89	1.98	79	50-121	9.6	35
2,6-Dinitrotoluene	2.50	1.94	1.86	1.90	76	39- 94	4.2	35
2,4-Dinitrotoluene	2.50	1.62	1.57	1.60	64	46-102	3.1	27
2-Nitrotoluene	2.50	1.13	1.25	1.19	48	23- 84	10	50
4-Nitrotoluene	2.50	1.33	1.43	1.38	55	26- 86	7.2	50
3-Nitrotoluene	2.50	1.42	1.52	1.47	59	23- 86	6.8	45

Category: 8330-LL-S
Matrix: SOIL
QC Lot: 23 MAY 94-N1
Concentration Units: ug/g

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
HMX	5.00	5.08	4.88	4.98	100	82-153	4.0	10
RDX	5.00	5.19	5.06	5.12	103	62-176	2.5	17
1,3,5-Trinitrobenzene	5.00	5.50	5.27	5.38	108	60-149	4.3	19
1,3-Dinitrobenzene	5.00	5.24	5.11	5.18	104	73-145	2.5	10
Tetryl	5.00	2.55	2.34	2.44	49	1-115	8.6	50
Nitrobenzene	5.00	5.42	5.26	5.34	107	73-135	3.0	10
2,4,6-Trinitrotoluene	5.00	4.78	4.61	4.70	94	1-160	3.6	15
4-Amino-2,6-dinitrotoluene	5.00	5.35	5.27	5.31	106	84-181	1.5	22
2-Amino-4,6-dinitrotoluene	5.00	5.05	4.87	4.96	99	82-140	3.6	14
2,6-Dinitrotoluene	5.00	4.83	4.72	4.78	96	85-120	2.3	10
2,4-Dinitrotoluene	5.00	5.08	4.91	5.00	100	78-133	3.4	10
2-Nitrotoluene	5.00	5.47	5.28	5.38	108	81-126	3.5	10
4-Nitrotoluene	5.00	5.57	5.39	5.48	110	79-125	3.3	10
3-Nitrotoluene	5.00	3.88	3.76	3.82	76	78-131	3.1	10

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

METHOD BLANK REPORT
Organics by Chromatography

Test: 8330-COE-LL-A
Matrix: AQUEOUS
QC Lot: 16 MAY 94-N1 QC Run: 16 MAY 94-N1

Analyte	Result	Units	Reporting Limit
HMX	ND	ug/L	0.80
RDX	ND	ug/L	0.84
1,3,5-Trinitrobenzene	ND	ug/L	0.26
1,3-Dinitrobenzene	ND	ug/L	0.11
Tetryl	ND	ug/L	0.80
Nitrobenzene	ND	ug/L	0.25
2,4,6-Trinitrotoluene	ND	ug/L	0.11
4-Amino-2,6-dinitrotoluene	ND	ug/L	0.060
2-Amino-4,6-dinitrotoluene	ND	ug/L	0.035
2,6-Dinitrotoluene	ND	ug/L	0.31
2,4-Dinitrotoluene	ND	ug/L	0.020
2-Nitrotoluene	ND	ug/L	0.25
4-Nitrotoluene	ND	ug/L	0.25
3-Nitrotoluene	ND	ug/L	0.25

Test: 8330-COE-LL-S
Matrix: SOIL
QC Lot: 23 MAY 94-N1 QC Run: 23 MAY 94-N1

HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

METHOD BLANK REPORT
Organics by Chromatography (cont.)

Test: 8330-COE-LL-S
Matrix: SOIL
QC Lot: 23 MAY 94-N1 QC Run: 23 MAY 94-N1

Analyte	Result	Units	Reporting Limit
HMX	ND	ug/g	2.2
RDX	ND	ug/g	1.0
1,3,5-Trinitrobenzene	ND	ug/g	0.25
1,3-Dinitrobenzene	ND	ug/g	0.25
Tetryl	ND	ug/g	0.65
Nitrobenzene	ND	ug/g	0.26
2,4,6-Trinitrotoluene	ND	ug/g	0.25
4-Amino-2,6-dinitrotoluene	ND	ug/g	0.25
2-Amino-4,6-dinitrotoluene	ND	ug/g	0.25
2,6-Dinitrotoluene	ND	ug/g	0.26
2,4-Dinitrotoluene	ND	ug/g	0.25
2-Nitrotoluene	ND	ug/g	0.25
4-Nitrotoluene	ND	ug/g	0.25
3-Nitrotoluene	ND	ug/g	0.25

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MATRIX SPECIFIC QC
ASSIGNMENT REPORT
Organics by Chromatography

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8330-COE-LL-S	035366-0007-SD	23 MAY 94-N1
MATRIX SPIKE	8330-COE-LL-S	035366-0007-MS	23 MAY 94-N1

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT
Organics by Chromatography

Test: 8330-COE-LL-S
Matrix SOIL
Sample: 035366-0007
Units: ug/g

Analyte	Sample	Concentration Matrix Spike	Concentration Matrix Spike Dup	Spiked MS	Spiked MSD	%Recovery MS	%Recovery MSD	% RPD
HMX	ND	5.0	5.0	5.0	5.0	98	99	0
RDX	ND	4.8	4.9	5.0	5.0	94	97	2
1,3,5-Trinitrobenzene	ND	5.3	5.4	5.0	5.0	105	107	2
1,3-Dinitrobenzene	ND	5.1	5.0	5.0	5.0	100	101	0
Tetryl	ND	2.5	2.5	5.0	5.0	50	50	1
Nitrobenzene	ND	5.2	5.2	5.0	5.0	103	104	1
2,4,6-Trinitrotoluene	ND	4.6	4.7	5.0	5.0	92	93	1
4-Amino-2,6-dinitrotoluene	ND	5.3	5.3	5.0	5.0	104	105	1
2-Amino-4,6-dinitrotoluene	ND	5.0	5.0	5.0	5.0	100	101	1
2,6-Dinitrotoluene	ND	4.8	4.7	5.0	5.0	94	94	0
2,4-Dinitrotoluene	ND	5.0	4.9	5.0	5.0	99	98	0
2-Nitrotoluene	ND	5.3	5.2	5.0	5.0	105	103	2
4-Nitrotoluene	ND	5.5	5.3	5.0	5.0	109	106	3
3-Nitrotoluene	ND	3.8	3.7	5.0	5.0	75	73	3

ND = Not detected
NC = Not calculated, calculation not applicable

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

QC LOT ASSIGNMENT REPORT
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035366-0001-EB	AQUEOUS	ICP-AT	21 MAY 94-6A	21 MAY 94-6A
035366-0001-EB	AQUEOUS	HG-CVAA-AT	24 MAY 94-6A	24 MAY 94-6A
035366-0002-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0002-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0003-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0003-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0004-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0004-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0005-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0005-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0006-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0006-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0007-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0007-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0007-MS	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0007-MS	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0007-SD	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0007-SD	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0008-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0008-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B
035366-0009-SA	SOIL	ICP-S	20 MAY 94-6B	20 MAY 94-6B
035366-0009-SA	SOIL	HG-CVAA-S	24 MAY 94-6B	24 MAY 94-6B

DUPLICATE CONTROL SAMPLE REPORT
Metals Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: ICP-AT								
Matrix: AQUEOUS								
QC Lot: 21 MAY 94-6A								
Concentration Units: mg/L								
Aluminum	2.00	1.94	1.85	1.90	95	80-116	4.7	10
Antimony	0.500	0.494	0.490	0.492	98	80-115	0.9	14
Arsenic	0.500	0.493	0.417	0.455	91	80-115	17	17
Barium	2.00	1.99	1.89	1.94	97	80-114	5.3	10
Beryllium	0.0500	0.0508	0.0481	0.0494	99	80-120	5.4	10
Cadmium	0.0500	0.0458	0.0463	0.0461	92	80-119	0.9	16
Calcium	100	96.8	93.8	95.3	95	80-114	3.1	10
Chromium	0.200	0.191	0.184	0.188	94	80-116	3.9	11
Cobalt	0.500	0.480	0.466	0.473	95	80-114	3.1	10
Copper	0.250	0.245	0.240	0.243	97	80-120	2.1	10
Iron	1.00	0.928	0.838	0.883	88	80-120	10	11
Lead	0.500	0.467	0.462	0.464	93	80-119	1.1	10
Magnesium	50.0	51.3	49.5	50.4	101	81-120	3.6	10
Manganese	0.500	0.485	0.469	0.477	95	80-116	3.2	10
Nickel	0.500	0.483	0.466	0.475	95	80-114	3.7	10
Potassium	50.0	47.8	45.7	46.7	93	80-120	4.5	13
Selenium	0.500	0.452	0.403	0.428	86	80-120	11	20
Silver	0.050	0.0454	0.0462	0.0458	92	80-119	1.6	15
Sodium	100	102	99.1	100	100	80-120	2.6	10
Thallium	0.50	0.470	0.498	0.484	97	80-120	5.9	20
Vanadium	0.500	0.466	0.443	0.455	91	80-116	5.1	10
Zinc	0.500	0.477	0.461	0.469	94	80-120	3.3	13
Category: HG-CVAA-AT								
Matrix: AQUEOUS								
QC Lot: 24 MAY 94-6A								
Concentration Units: mg/L								
Mercury	0.00100	0.00103	0.00105	0.00104	104	75-125	1.9	20
Category: ICP-S								
Matrix: SOIL								
QC Lot: 20 MAY 94-6B								
Concentration Units: mg/kg								
Aluminum	200	192	180	186	93	80-120	6.5	20
Antimony	50	43.6	45.0	44.3	89	80-120	3.2	20
Arsenic	50	41.8	40.9	41.3	83	80-120	2.3	20

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

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

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: ICP-S								
Matrix: SOIL								
QC Lot: 20 MAY 94-6B								
Concentration Units: mg/kg								
Barium	200	192	187	190	95	80-120	2.5	20
Beryllium	5.0	4.76	4.62	4.69	94	80-120	3.0	20
Cadmium	5.0	4.68	4.51	4.60	92	80-120	3.7	20
Calcium	10000	9070	8830	8950	89	80-120	2.6	20
Chromium	20	18.4	17.3	17.9	89	80-120	6.2	20
Cobalt	50	46.1	44.3	45.2	90	80-120	4.1	20
Copper	25	24.6	24.0	24.3	97	80-120	2.5	20
Iron	100	87.0	81.1	84.0	84	80-120	7.0	20
Lead	50	46.4	43.7	45.0	90	80-120	6.1	20
Magnesium	5000	4620	4430	4530	91	80-120	4.2	20
Manganese	50	47.0	45.5	46.2	92	80-120	3.4	20
Nickel	50	44.9	43.7	44.3	89	80-120	2.8	20
Potassium	5000	4670	4540	4600	92	80-120	2.9	20
Silver	5	5.20	4.97	5.09	102	80-120	4.6	20
Sodium	10000	10000	9820	9920	99	80-120	2.0	20
Thallium	50	55.6	45.9	50.8	102	80-120	19	20
Vanadium	50	44.6	43.2	43.9	88	80-120	3.1	20
Zinc	50	45.3	43.5	44.4	89	80-120	4.1	20
Category: HG-CVAA-S								
Matrix: SOIL								
QC Lot: 24 MAY 94-6B								
Concentration Units: mg/kg								
Mercury	0.500	0.504	0.519	0.512	102	75-125	2.9	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: ICP-AFIR-AT			
Matrix: AQUEOUS			
QC Lot: 21 MAY 94-6A QC Run: 21 MAY 94-6A			
Aluminum	ND	mg/L	0.20
Antimony	ND	mg/L	0.20
Arsenic	ND	mg/L	0.30
Barium	ND	mg/L	0.10
Beryllium	ND	mg/L	0.0020
Cadmium	ND	mg/L	0.0050
Calcium	ND	mg/L	5.0
Chromium	ND	mg/L	0.030
Cobalt	ND	mg/L	0.040
Copper	ND	mg/L	0.030
Iron	ND	mg/L	0.040
Lead	ND	mg/L	0.20
Magnesium	ND	mg/L	5.0
Manganese	ND	mg/L	0.010
Molybdenum	ND	mg/L	0.040
Nickel	ND	mg/L	0.040
Potassium	ND	mg/L	5.0
Selenium	ND	mg/L	0.40
Silver	ND	mg/L	0.030
Sodium	ND	mg/L	5.0
Thallium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.040
Zinc	ND	mg/L	0.010
Test: HG-CVAA-GLASS-AT			
Matrix: AQUEOUS			
QC Lot: 24 MAY 94-6A QC Run: 24 MAY 94-6A			
Mercury	ND	mg/L	0.00020
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6B QC Run: 20 MAY 94-6B			
Aluminum	ND	mg/kg	20.0
Antimony	ND	mg/kg	20.0
Arsenic	ND	mg/kg	30.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	0.20

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6B QC Run: 20 MAY 94-6B			
Cadmium	ND	mg/kg	2.0
Calcium	ND	mg/kg	500
Chromium	ND	mg/kg	4.0
Cobalt	ND	mg/kg	4.0
Copper	ND	mg/kg	3.0
Iron	ND	mg/kg	4.0
Lead	ND	mg/kg	20.0
Magnesium	ND	mg/kg	500
Manganese	ND	mg/kg	1.0
Molybdenum	ND	mg/kg	4.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Selenium	ND	mg/kg	40.0
Silver	ND	mg/kg	3.0
Sodium	ND	mg/kg	500
Thallium	ND	mg/kg	200
Vanadium	ND	mg/kg	4.0
Zinc	ND	mg/kg	1.0
Test: HG-CVAA-S			
Matrix: SOIL			
QC Lot: 24 MAY 94-6B QC Run: 24 MAY 94-6B			
Mercury	ND	mg/kg	0.10
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6B QC Run: 20 MAY 94-6B			
Aluminum	ND	mg/kg	20.0
Antimony	ND	mg/kg	20.0
Arsenic	ND	mg/kg	30.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	0.20
Cadmium	ND	mg/kg	2.0
Calcium	ND	mg/kg	500
Chromium	ND	mg/kg	4.0
Cobalt	ND	mg/kg	4.0
Copper	ND	mg/kg	3.0

METHOD BLANK REPORT
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-AFIR-S			
Matrix: SOIL			
QC Lot: 20 MAY 94-6B QC Run: 20 MAY 94-6B			
Iron	ND	mg/kg	4.0
Lead	ND	mg/kg	20.0
Magnesium	ND	mg/kg	500
Manganese	ND	mg/kg	1.0
Molybdenum	ND	mg/kg	4.0
Nickel	ND	mg/kg	4.0
Potassium	ND	mg/kg	500
Selenium	ND	mg/kg	40.0
Silver	ND	mg/kg	3.0
Sodium	ND	mg/kg	500
Thallium	ND	mg/kg	200
Vanadium	ND	mg/kg	4.0
Zinc	ND	mg/kg	1.0
Test: HG-CVAA-S			
Matrix: SOIL			
QC Lot: 24 MAY 94-6B QC Run: 24 MAY 94-6B			
Mercury	ND	mg/kg	0.10

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MATRIX SPECIFIC QC
ASSIGNMENT REPORT
Metals Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	ICP-AFIR-S	035366-0007-SD	20 MAY 94-6B
MATRIX SPIKE	ICP-AFIR-S	035366-0007-MS	20 MAY 94-6B
MATRIX SPIKE DUPLICATE	HG-CVAA-S	035366-0007-SD	24 MAY 94-6B
MATRIX SPIKE	HG-CVAA-S	035366-0007-MS	24 MAY 94-6B

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT
Metals Analysis and Preparation

Analyte	Sample	Concentration Matrix Spike	Concentration Matrix Spike Dup	Spiked MS	Spiked MSD	%Recovery MS	%Recovery MSD	% RPD
Test: ICP-AFIR-S								
Matrix SOIL								
Sample: 035366-0007								
Units: mg/kg								
Aluminum	9960	9610	10200	200	200	NC	NC	NC
Antimony	ND	16.8	22.1	50.0	50.0	34	44	27
Barium	221	437	370	200	200	108	75	36
Beryllium	0.47	4.7	4.8	5.0	5.0	85	88	3
Cadmium	ND	4.3	4.2	5.0	5.0	85	84	2
Calcium	55400	64900	54900	10000	10000	NC	NC	NC
Chromium	8.1	22.9	23.7	20.0	20.0	74	78	5
Cobalt	ND	42.6	43.1	50.0	50.0	85	86	1
Copper	6.5	27.1	27.7	25.0	25.0	82	85	3
Iron	8020	7500	8000	100	100	NC	NC	NC
Lead	ND	42.8	44.2	50.0	50.0	86	88	3
Magnesium	3290	7430	7550	5000	5000	83	85	3
Manganese	131	164	168	50.0	50.0	66	75	12
Nickel	14.7	51.8	54.1	50.0	50.0	74	79	6
Potassium	2120	6100	6130	5000	5000	80	80	1
Silver	ND	3.9	3.6	5.0	5.0	78	72	8
Sodium	ND	8670	8760	10000	10000	87	88	1
Vanadium	20.6	57.7	58.8	50.0	50.0	74	76	3
Zinc	20.2	58.1	59.7	50.0	50.0	76	79	4
Test: HG-CVAA-S								
Matrix SOIL								
Sample: 035366-0007								
Units: mg/kg								
Mercury	ND	0.56	0.56	0.50	0.50	111	112	1

ND = Not detected
NC = Not calculated, calculation not applicable

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

Enseco

QC LOT ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
035366-0001-EB	AQUEOUS	S-A	15 MAY 94-6A	15 MAY 94-6A
035366-0002-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0003-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0004-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0005-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0006-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0007-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0007-MS	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0007-SD	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0008-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6
035366-0009-SA	SOIL	S-S	26 MAY 94-M6	26 MAY 94-M6

DUPLICATE CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: S-A Matrix: AQUEOUS QC Lot: 15 MAY 94-6A Concentration Units: mg/L								
Sulfide, Total	0.4270	0.369	0.409	0.389	91	80-120	10	20
Category: S-S Matrix: SOIL QC Lot: 26 MAY 94-M6 Concentration Units: mg/kg								
Sulfide, Total	100.0	66.0	60.9	63.4	63	0-120	8.0	200

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

Enseco

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: S-SPEC-AT Matrix: AQUEOUS QC Lot: 15 MAY 94-6A QC Run: 15 MAY 94-6A			
Sulfide, Total	ND	mg/L	0.050
Test: STOT-SPEC-S Matrix: SOIL QC Lot: 26 MAY 94-M6 QC Run: 26 MAY 94-M6			
Sulfide, Total	ND	mg/kg	0.50
Test: STOT-SPEC-S Matrix: SOIL QC Lot: 26 MAY 94-M6 QC Run: 26 MAY 94-M6			
Sulfide, Total	ND	mg/kg	0.50

Enseco

MATRIX SPECIFIC QC
ASSIGNMENT REPORT
Wet Chemistry Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	STOT-SPEC-S	035366-0007-SD	26 MAY 94-M6
MATRIX SPIKE	STOT-SPEC-S	035366-0007-MS	26 MAY 94-M6

Enseco

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT
Wet Chemistry Analysis and Preparation

Analyte	Sample	Concentration Matrix Spike	Concentration Matrix Spike Dup	Spiked MS	Spiked MSD	%Recovery MS	%Recovery MSD	% RPD
Test: STOT-SPEC-S Matrix SOIL Sample: 035366-0007 Units: mg/kg								
Sulfide, Total	ND	47.3	46.2	100	100	47	46	2

ND = Not detected
NC = Not calculated, calculation not applicable

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

ENSECO ANALYTICAL SERVICES REQUEST FORM

-1

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SS - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1803-2

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	0915				NM	035	041
Begin Date				Composite End Date					

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
WATER		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SULFIDES
METHOD:	SW3010/SW6010	SW7470	SW8330	SW9030
PARAMETER:	SEMI-VOC	GROSS ALPH & BETA		
METHOD:	SW3520/SW8270	SW9310		
PARAMETER:				
METHOD:				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 EQUIPMENT BLANK

Record 6

Total number of sample bottles for this request: 8

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-2

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/804-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	0945				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-11-93	930
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0306-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1130				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5/10/94	1130
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-4

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1805-1

Project Account #: 463536002

Begin Date Year*	Begin Date Month*	Begin Date Day*	Begin Date Time*	Composite End Date Month	Composite End Date Day	Composite End Date Time	State Code*	District/ User Code*	County Code
1994	05	09	1010				NM	035	041

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J. McCw	5-11-94	920
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-5

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0403-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1225				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-6

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

OB/OD04-1 — Station ID or Unique Number*

46353602 — Project Account #

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1250				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick S. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-7

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0503-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1445				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	JDC	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 9-11 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-7 MS/SD

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0504-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1445				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick G. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 MATRIX SPIKE & MATRIX SPIKE DUPLICATE SAMPLES COLLECTED AT 9-11 FEET, SOIL.

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-8

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: 0B/0D05.05-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1450				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J DeClos	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0506-1

Project Account #: 46353600 2

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1525				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

Appendix III

Radiochemical data for soil samples

OB/OD 1501 through OB/OD 1802

Enseco

ANALYTICAL RESULTS

FOR

U.S. GEOLOGICAL SURVEY

ENSECO-RMAL NO. 035755

JUNE 27, 1994

Reviewed by: Karen Germann

Karen Germann

Julieann L. Kramer

Julieann L. Kramer

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

I. OVERVIEW

On May 11, 1994, Enseco-Rocky Mountain Analytical Laboratory received 1 aqueous and 15 soil samples from the U.S. Geological Survey.

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:

I. Overview
II. Sample Description Information/Analytical Test Requests
III. Analytical Results
IV. Quality Control Report

The results for all other requested analyses associated with these samples have been reported in RMAL project 035343.

Standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

Enseco

SAMPLE DESCRIPTION INFORMATION
for
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
035755-0001-SA	OB/OD1501-2	AQUEOUS	08 MAY 94	08:10	10 MAY 94
035755-0002-SA	OB/OD1502-1	SOIL	08 MAY 94	08:30	10 MAY 94
035755-0003-SA	OB/OD1503-1	SOIL	08 MAY 94	08:45	10 MAY 94
035755-0004-SA	OB/OD1504-1	SOIL	08 MAY 94	09:30	10 MAY 94
035755-0005-SA	OB/OD1505-1	SOIL	08 MAY 94	10:00	10 MAY 94
035755-0006-SA	OB/OD1601-1	SOIL	08 MAY 94	10:20	10 MAY 94
035755-0007-SA	OB/OD1602-1	SOIL	08 MAY 94	11:15	10 MAY 94
035755-0008-SA	OB/OD1603-1	SOIL	08 MAY 94	11:40	10 MAY 94
035755-0009-SA	OB/OD1604-1	SOIL	08 MAY 94	12:20	10 MAY 94
035755-0010-SA	OB/OD1701-1	SOIL	08 MAY 94	12:45	10 MAY 94
035755-0011-SA	OB/OD1702-1	SOIL	08 MAY 94	13:05	10 MAY 94
035755-0012-SA	OB/OD1703-1	SOIL	08 MAY 94	13:10	10 MAY 94
035755-0013-SA	OB/OD1704-1	SOIL	08 MAY 94	13:45	10 MAY 94
035755-0014-SA	OB/OD1705-1	SOIL	08 MAY 94	14:10	10 MAY 94
035755-0015-SA	OB/OD1801-1	SOIL	08 MAY 94	14:35	10 MAY 94
035755-0016-SA	OB/OD1802-1	SOIL	08 MAY 94	14:50	10 MAY 94

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 035755	Group Code	Analysis Description	Custom Test?
0001	A	Gross Alpha/Beta- Gas Proportional Counter	N
		Prep- Gross Alpha/Beta Gas Proportional Counter	N
0002 - 0016	B	Gross Alpha/Beta-Gas Proportional Counter	N
		Prep- Gross Alpha/Beta-Gas Proportional Counter	N

III. 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. The date prepared is typically the date an extraction or digestion was initiated. For volatile organic compounds in water, the date prepared is the date the screening of the sample was performed.

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 3.5, May, 1992.

In addition, surrogate recovery data is presented for all GC/MS analyses. The surrogate recovery is an indication of the affect of the sample matrix on the performance of the method. The results from the Standard Enseco QA/QC Program, which generates data which are independent of matrix effects, is given in Section IV.

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1501-2
Lab ID: 035755-0001-SA
Matrix: AQUEOUS
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	-0.05	0.18	pCi/L	EPA 9310	31 MAY 94
Gross Beta	0.1	1.9	pCi/L	EPA 9310	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1502-1
Lab ID: 035755-0002-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	9.4	3.5	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	21.4	2.5	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1503-1
Lab ID: 035755-0003-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	5.7	2.7	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	19.4	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1504-1
Lab ID: 035755-0004-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	6.4	2.9	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	18.4	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1505-1
Lab ID: 035755-0005-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	5.0	3.0	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	17.7	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1601-1
Lab ID: 035755-0006-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	5.1	2.8	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	18.3	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1602-1
Lab ID: 035755-0007-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	8.3	3.3	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	20.2	2.4	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1603-1
Lab ID: 035755-0008-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	5.9	2.8	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	14.4	2.2	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1604-1
Lab ID: 035755-0009-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	7.7	3.1	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	19.4	2.3	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1701-1
Lab ID: 035755-0010-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	7.9	3.2	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	22.9	2.5	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1702-1
Lab ID: 035755-0011-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	6.9	3.1	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	13.9	2.1	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1703-1
Lab ID: 035755-0012-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	8.2	3.1	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	12.7	2.1	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1704-1
Lab ID: 035755-0013-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	4.9	2.8	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	18.1	2.3	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1705-1
Lab ID: 035755-0014-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	7.9	3.1	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	16.9	2.2	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1801-1
Lab ID: 035755-0015-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	10.9	3.6	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	19.6	2.4	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1802-1
Lab ID: 035755-0016-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 08 MAY 94 Received: 10 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	10.4	3.6	pCi/g	SW846 9310(M)	02 JUN 94
Gross Beta	16.3	2.2	pCi/g	SW846 9310(M)	02 JUN 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

IV. QUALITY CONTROL REPORT

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.

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 surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

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.

Enseco

Enseco Mixed Waste Laboratory
Radiochemistry Quality Control Report

Parameter: Gross Alpha and Beta
Alpha Run: 03-Jun-94 IT
Beta Run: 07-Jun-94 IT
QC Category: GAB-S
Matrix: SOIL

Control Sample Report

Sample	Observed Activity	+/-	2σ	Spike Activity	+/	2σ	Units	Accuracy
Alpha	4.68E+00	+/-	4.5E-01	4.98E+00	+/	5.2E-02	DPM/SA	94%
Beta	3.061E+01	+/-	1.8E+00	3.008E+01	+/	3.0E+00	DPM/SA	102%

Control Sample Statistics

Analyte	Accuracy	Limits
Gross Alpha	94%	70-130%
Gross Beta	102%	70-130%

PC

Enseco

Enseco Mixed Waste Laboratory
Radiochemistry Blank Report

Parameter: Gross Alpha and Beta
Alpha Run: 03-Jun-94 IT
Beta Run: 07-Jun-94 IT
QC Category: GAB-S
Matrix: SOIL

Blank Results Report

Sample	Observed Activity	+/-	2σ	MDC	Units
Alpha	-9.62E-02	+/-	5.9E-02	1.7E-01	DPM/SA
Beta	-1.49E-01	+/-	5.9E-01	1.3E+00	DPM/SA

Blank Evaluation Report

Sample	Observed/MDC	Limits	Flag
Alpha	-0.58	< 2 x MDC	Accept
Beta	-0.12	< 2 x MDC	Accept

PC

ENSECO ANALYTICAL SERVICES REQUEST FORM

>>343 -1

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SS - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1501-2

Project Account #: 463536002

Begin Date Year*	Begin Date Month*	Begin Date Day*	Begin Date Time*	Composite End Date Month	Composite End Date Day	Composite End Date Time	State Code*	District/ User Code*	County Code
94	05	09	0910				NM	035	041

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
WATER		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SULFIDES
METHOD:	SW3010/SW6010	SW7470	SW8330	SW9030
PARAMETER:	SEMI-VOC	GROSS ALPH & BETA		
METHOD:	SW3520/SW8270	SW9310		
PARAMETER:				
METHOD:				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time
		5-10-94	900

Comments (Only 50 characters stored in NWIS)

Record 5 EQUIPMENT BLANK

Record 6

Total number of sample bottles for this request: 18

SHIP TO:

Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611

ATTENTION: Karen Germann

ENSECO ANALYTICAL SERVICES REQUEST FORM

-2

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

Sample identification

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Station ID or Unique Number*: OB/OD/502-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0830				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
		5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SURFACE SAMPLE, SOIL

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-3

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1502-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0845				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SAMPLE COLLECTED FROM 5-6 FEET SOIL

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-4

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1504-1

Project Account #: 4635360002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	0930				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Frederick S. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature) J Beck	5-10-94	800
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-5

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD15.05-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1000				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED. 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-6

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1601-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1020				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick G. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SURFACE SOIL SAMPLE

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-7

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1602-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1115				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 4-7 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1603-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1140				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J DeCl	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/604-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1220				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature) J. Dell	5-10-94	800
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET.

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD170-1

Project Account #: 463536002

Begin Date Year*	Begin Date Month*	Begin Date Day*	Begin Date Time*	Composite End Date Month	Composite End Date Day	Composite End Date Time	State Code*	District/ User Code*	County Code
1994	05	08	1245				NM	035	041

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature) K. Germann	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLETED AT SURFACE

Record 6 Original COC not sent w/ samples - faxed ~~Copies~~ copy Received 5/13/94

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD170.2-1

Project Account #: 4635360.02

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1305				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 4-5 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-038

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/703-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1310				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Frederick S Gebhardt	Received by: (Signature)	5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature) J Bell	5-10-94	700
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 6 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1704-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1345				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO. _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD170 5-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1410				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270
PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

pecial Handling (Circle as appropriate and explain in record 5)

*Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition*
(Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD/901-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1435				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[signature]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 COLLECT SOIL SAMPLE AT SURFACE

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-16

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1802-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	08	1450				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER:	SEMI-VOC
METHOD:	SW3520/SW8270

PARAMETER:	GROSS ALPH & BETA
METHOD:	SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-9-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-10-94	900
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 5-6 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

Appendix IV

Radiochemical data for soil samples OB/OD 1803 through OB/OD 1805 and OB/OD 03, OB/OD 04, and OB/OD 05

Enseco

ANALYTICAL RESULTS

FOR

U.S. GEOLOGICAL SURVEY

ENSECO-RMAL NO. 035756

JUNE 27, 1994

Reviewed by: Karen Germann

Karen Germann

Julieann L. Kramer

Julieann L. Kramer

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

I. OVERVIEW

On May 11, 1994, Enseco-Rocky Mountain Analytical Laboratory received 1 aqueous and 10 soil samples from the U.S. Geological Survey.

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:

I. Overview
II. Sample Description Information/Analytical Test Requests
III. Analytical Results
IV. Quality Control Report

The results for all other requested analyses associated with these samples have been reported in RMAL project 035366.

The request for matrix spike/matrix spike duplicate for gross alpha/beta by method 9310 of sample 035756-0007 was cancelled. It in not customary to perform MS/SD for rad chem analysis.

With the exceptions as mentioned above, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits.

II. SAMPLE DESCRIPTION INFORMATION/ANALYTICAL TEST REQUESTS

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
U.S. Geological Survey

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
035756-0001-EB	OB/OD1803-2	AQUEOUS	09 MAY 94	09:15	11 MAY 94
035756-0002-SA	OB/OD1804-1	SOIL	09 MAY 94	09:45	11 MAY 94
035756-0003-SA	OB/OD0306-1	SOIL	09 MAY 94	11:30	11 MAY 94
035756-0004-SA	OB/OD1805-1	SOIL	09 MAY 94	10:10	11 MAY 94
035756-0005-SA	OB/OD0403-1	SOIL	09 MAY 94	12:25	11 MAY 94
035756-0006-SA	OB/OD0404-1	SOIL	09 MAY 94	12:50	11 MAY 94
035756-0007-SA	OB/OD0503-1	SOIL	09 MAY 94	14:45	11 MAY 94
035756-0007-MS	OB/OD0504-1	SOIL	09 MAY 94	14:45	11 MAY 94
035756-0007-SD	OB/OD0504-1	SOIL	09 MAY 94	14:45	11 MAY 94
035756-0008-SA	OB/OD0505-1	SOIL	09 MAY 94	14:50	11 MAY 94
035756-0009-SA	OB/OD0506-1	SOIL	09 MAY 94	15:25	11 MAY 94

ANALYTICAL TEST REQUESTS
for
U.S. Geological Survey

Lab ID: 035756	Group Code	Analysis Description	Custom Test?
0001	A	Gross Alpha/Beta- Gas Proportional Counter	N
		Prep- Gross Alpha/Beta Gas Proportional Counter	N
0002 - 0009	B	Gross Alpha/Beta-Gas Proportional Counter	N
		Prep- Gross Alpha/Beta-Gas Proportional Counter	N

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1803-2
Lab ID: 035756-0001-EB
Matrix: AQUEOUS
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	-0.01	0.29	pCi/L	EPA 9310	31 MAY 94
Gross Beta	-0.1	1.8	pCi/L	EPA 9310	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1804-1
Lab ID: 035756-0002-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	4.1	2.5	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	14.5	2.1	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0306-1
Lab ID: 035756-0003-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	12.2	3.8	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	17.7	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD1805-1
Lab ID: 035756-0004-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	7.8	3.2	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	18.4	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0403-1
Lab ID: 035756-0005-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	10.2	3.4	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	19.2	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0404-1
Lab ID: 035756-0006-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	7.0	2.9	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	15.7	2.2	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0503-1
Lab ID: 035756-0007-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	8.5	3.1	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	20.8	2.4	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0505-1
Lab ID: 035756-0008-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	8.7	3.5	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	20.1	2.4	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

Enseco

Radiochemistry

Client Name: U.S. Geological Survey
Client ID: OB/OD0506-1
Lab ID: 035756-0009-SA
Matrix: SOIL
Authorized: 27 MAY 94 Sampled: 09 MAY 94 Received: 11 MAY 94

Parameter	Result**	+/- 2 Sigma Uncertainty*	Units	Analytical Method	Analyzed Date
Gross Alpha	6.8	3.1	pCi/g	SW846 9310(M)	31 MAY 94
Gross Beta	19.6	2.3	pCi/g	SW846 9310(M)	31 MAY 94

* The counting uncertainty is significant to two figures
** Result is significant to the magnitude of the final significant figure of the uncertainty

Reported By: Daniel Rebarchik Approved By: Karen Germann

IV. QUALITY CONTROL REPORT

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.

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 surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g., metals or conventional analyses) a single DCS serves as the control sample. An SCS is prepared for each sample lot for which the DCS pair are not analyzed. The recovery of the SCS is charted in exactly the same manner as described for the DCS, and provides a daily check on the performance of the method.

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.

Enseco Mixed Waste Laboratory
Radiochemistry Quality Control Report

Parameter: Gross Alpha and Beta
Alpha Run: 03-Jun-94 IT
Beta Run: 07-Jun-94 IT
QC Category: GAB-S
Matrix: SOIL

Control Sample Report

Sample	Observed Activity	+/-	2σ	Spike Activity	+/	2σ	Units	Accuracy
Alpha	4.68E+00	+/-	4.5E-01	4.98E+00	+/	5.2E-02	DPM/SA	94%
Beta	3.061E+01	+/-	1.8E+00	3.008E+01	+/	3.0E+00	DPM/SA	102%

Control Sample Statistics

Analyte	Accuracy	Limits
Gross Alpha	94%	70-130%
Gross Beta	102%	70-130%

PC

Enseco Mixed Waste Laboratory
Radiochemistry Blank Report

Parameter: Gross Alpha and Beta
Alpha Run: 03-Jun-94 IT
Beta Run: 07-Jun-94 IT
QC Category: GAB-S
Matrix: SOIL

Blank Results Report

Sample	Observed Activity	+/-	2σ	MDC	Units
Alpha	-9.62E-02	+/-	5.9E-02	1.7E-01	DPM/SA
Beta	-1.49E-01	+/-	5.9E-01	1.3E+00	DPM/SA

Blank Evaluation Report

Sample	Observed/MDC	Limits	Flag
Alpha	-0.58	< 2 x MDC	Accept
Beta	-0.12	< 2 x MDC	Accept

PC

ENSECO ANALYTICAL SERVICES REQUEST FORM

-1

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SS - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD18.03-2

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	0915				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
WATER		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SULFIDES
METHOD:	SW3010/SW6010	SW7470	SW8330	SW9030
PARAMETER:	SEMI-VOC		GROSS ALPH & BETA	
METHOD:	SW3520/SW8270		SW9310	
PARAMETER:				
METHOD:				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 EQUIPMENT BLANK

Record 6

Total number of sample bottles for this request: 8

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611

ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-2

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1804-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	0945				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
		5-11-93	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-3

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0306-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1130				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

		Date	Time
Relinquished by: (Signature) Fredrick E. Gebhardt	Received by: (Signature)	5/10/94	1130
Relinquished by: (Signature)	Received by: (Signature)		
Relinquished by: (Signature)	Received at lab by: (Signature)	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)		

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

-4

ENSECO ANALYTICAL SERVICES REQUEST FORM

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD1805-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
7394	05	09	1010				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	920
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-5

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0403-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1225				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 9-12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-6

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD04.04-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1250				NM	035	041

Begin Date: Year*, Month*, Day*, Time*
Composite End Date: Month, Day, Time

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Fredrick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J. Dechs	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 14-17 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-7

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD05.03-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1445				NM	035	041

Begin Date — Composite End Date

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO. _____

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick E. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED 9-11 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-7 MS/SD

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Station Name	Field ID	Field Office	Project	Collector	Phone (FTS)
MELROSE AFR OB/OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

Station ID or Unique Number*: OB/OD0504-1

Project Account #: 463536002

Year*	Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
1994	05	09	1445				NM	035	041
Begin Date				Composite End Date					

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030

PARAMETER: SEMI-VOC
METHOD: SW3520/SW8270

PARAMETER: GROSS ALPH & BETA
METHOD: SW9310

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick G. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 MATRIX SPIKE & MATRIX SPIKE DUPLICATE SAMPLES COLLECTED AT 9-11 FEET, SOIL.

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

-8

Special Handling (Circle as appropriate and explain in record 5)

Hazardous material

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Field ID

MELROSE AFR OB/OD — Station Name
USGS/WRD/NM — Field Office
OB/OD — Project
GEBHARDT — Collector
505-262-5378 — Phone (FTS)

File Deposition* (Circle one)
Q - WATSTORE
X - Lab File

For Laboratory Use Only

Sample identification

OB/OD05 05-1 — Station ID or Unique Number*

46353602 — Project Account #

1994 — Year*
05 — Month*
09 — Day*
1450 — Time*
Begin Date

Month / Day / Time — Composite End Date

NM — State Code*
035 — District/ User Code*
041 — County Code

Analysis level codes and schedules

Sample Medium**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
SOIL		H or 9	9		9	9

PARAMETER:	METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
METHOD:	SW3050/SW6010	SW7471	SW8330	D2216	SW9030
PARAMETER:	SEMI-VOC				
METHOD:	SW3520/SW8270				
PARAMETER:	GROSS ALPH & BETA				
METHOD:	SW9310				

Chain-of-Custody Record

PROJECT NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Frederick S. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	J DeCles	5-11-94	930
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

Record 5 SOIL SAMPLE COLLECTED AT 12 FEET

Record 6

Total number of sample bottles for this request: 3

SHIP TO:
Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
ATTENTION: Karen Germann

SS-034

ENSECO ANALYTICAL SERVICES REQUEST FORM

(Circle as appropriate and explain in record 5)

Site Type (circle one)
SW - Surface Water
GW - Ground Water
ME - Meteorological
LK - Lake
ES - Estuary
SP - Spring
SX - Special Source

Name	Field ID	Field Office	Project	Collector	Phone (FTS)
OD		USGS/WRD/NM	OB/OD	GEBHARDT	505-262-5378

Sample identification

For Laboratory Use Only

Station ID or Unique Number*: OB/OD0506-1

Project Account #: 463536002

Month*	Day*	Time*	Month	Day	Time	State Code*	District/ User Code*	County Code
5	09	1525				NM	035	041

Composite End Date

Analysis level codes and schedules

Sample Number**	Geologic Unit	Analysis Status**	Analysis Source**	Hydrologic Condition**	Sample Type**	Hydrologic Event**
		H or 9	9		9	9

METALS	MERCURY	EXPLOSIVES	SOIL MOISTURE	SULFIDES
SW3050/SW6010	SW7471	SW8330	D2216	SW9030

SEMI-VOC
SW3520/SW8270

GROSS ALPH & BETA
SW9310

Chain-of-Custody Record

NAME MELROSE AFR OB/OD PROJECT NO. 463536002 P.O. NO.

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Ulrich S. Gebhardt		5-10-94	1200
Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Time
	[illegible]	5-11-94	830
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Time

Comments (Only 50 characters stored in NWIS)

SOIL SAMPLE COLLECTED AT 14-17 FEET

Sample bottles for this request: 3

SHIP TO:

Enseco-Rocky Mountain Analytical
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611

ATTENTION: Karen Germann

Appendix V

Field Notes

8 MAY 94 MELROSE AFR OB/OD

0713 Jud Gebhardt + RK DeWees arrive at Melrose AFR. Met EOD personnel. They will escort us to OB/OD site.

0735 arrive at OB/OD site will organize equipment at prepare to collect equipment blank.

* all equipment was deconned in Albuquerque.
DECON: Liquidnox rinse followed by potable water rinse. Final rinse with ultra pure DI water. Equipment then wrapped in oil free aluminum foil

0810 Collected equipment at site OB/OD 1501-2EB

0825 Took at Photovac Tip reading at surface of site 15. Reading = background = .0. Site 15 is 25 feet south of south edge of metal box, center of OB/OD area.

0830 Collected surface sample OB/OD 1502-1.

0845 collected 5-6 foot sample with a stainless steel hand auger, OB/OD 1503-1

0849 Took PID reading of 5-6 foot sample. Reading = 0.3 ppm.

0930 Collected 9-12 foot sample 1504-1, with Geoprobe.

0935 Took PID reading OB/OD 1504-1. Reading = 0.2 ppm

1000 Collected 14-17 foot sample OB/OD 1505-1.

1005 Took PID reading OB/OD 1505-1. Reading = 0.4 ppm

1020 Collected surface sample OB/OD 1601-1. OB/OD 1601 is 25 feet west of west edge of metal box center of OB/OD area.

8 MAY 94

1028 Took PID reading of surface sample.
Reading = background
1115 Collected 4-7 foot sample OB/OD 1602-1.
Hard material at 4 feet prevented using the hand auger, used the Geoprobe.
1120 Took PID reading of OB/OD 1602-1,
Reading = 0.2 ppm.
1140 Collected 9-12 foot sample OB/OD 1603-1
1145 PID reading of OB/OD 1602-1. = 0.4 ppm
1220 Collected 14-17 foot sample OB/OD 1604-1.
1225 PID reading of OB/OD 1604-1 = 0.3 ppm
1245 Collected surface sample OB/OD 1701-1
1250 PID Reading of OB/OD 1701-1 = 0.1 ppm
1305 Collected 4-6 foot sample, with a hand auger. This will be sample OB/OD 1702-1 and Duplicate sample OB/OD 1703-1
1310 PID Reading of OB/OD 1702-1 & 1703-1 = 0.5 ppm
** OB/OD 1703-1 WILL HAVE SAMPLE TIME ON THE ANALYTICAL FORM 1310, AND SAMPLE DEPTH 6 FEET. OB/OD 1702-1 TIME 1305 DEPTH 4-5 FEET. SITE 17 IS 25 FEET NORTH OF METAL BOX.
1345 Collected 9-12 foot sample OB/OD 1704-1.
1350 PID reading at OB/OD 1704-1 = 0.5 ppm
1410 Collected 14-17 foot sample OB/OD 1705-1.
1415 PID reading at OB/OD 1705-1 = 0.3 ppm

8 MAY 94

1435 Collected surface sample at site OB/OD 1801-1.
Site 18 is 25 east of metal box.
1440 PID reading at site OB/OD 1801-1 = 0.2 ppm
1450 Collected 5-6 foot sample OB/OD 1802-1
1455 PID reading at site OB/OD 1802-1 = 0.4 ppm

** 1500 WILL FINISH SAMPLING FOR THE DAY WILL NOW DECON HOMOGENIZE BOWL, SAMPLE SPOON, AND GEOPROBE DRIVE SYSTEM (DRIVE POINT, SHOE, ETC.) THIS DECON PROCEDURE WAS DONE BETWEEN EACH SITE.

1540 Fred + RK leave site headed back to Clovis, NM.

9 MAY 94

0830 Fred Gebhardt and RK DeWees arrive at Melrose AFR office. We just recieved permission to head to OB/OD area unescorted. Earlier delivered coolers packed with samples to Cannon AFB Environmental Dept, they will be picked up by Fed X later today. We now ~~[illegible]~~ prepare to collect a equipment blank.

0915 Equipment blank collected OB/OD1803-2.

0945 Collected 9-12 foot sample OB/OD1804-1.

0950 PID reading of OB/OD1804-1 sample = 0.1 ppm

1010 Collected 14-17 foot sample OB/OD1805-1.

1015 PID reading of OB/OD1805-1 sample = 0.4 ppm

1130 Collected 14-17 foot sample OB/OD0306-1.

1130 PID reading of OB/OD0306-1 sample = 0.4 ppm

1225 Collected 9-12 foot sample OB/OD0403-1.

1230 PID reading of OB/OD0403-1 sample = 0.4 ppm

1250 Collected 14-17 foot sample OB/OD 0404-1.

1255 PID reading of OB/OD 0404-1 sample = 0.3 ppm.

1305 EOD arrives at site 4.

1315 EOD off site.

1445 Collected 9-12 foot sample OB/OD 0503, duplicate sample OB/OD 0505, MATRIX SPIKE & MATRIX SPIKE DUPLICATE sample OB/OD 0504. OB/OD 0504 will have a different time and depth listed on the analytical form than the sample and MS-MSD. However it was actually collected at the same depth and time

9 MAY 94

1450 PID readings of samples OB/000503-1 = 0.4 ppm
1525 collected 14-17 foot sample OB/000506-1.
1530 PID reading of sample OB/000506-1 = 0.2 ppm
finished collecting samples will collect equipment and call it a day.
1610 Off site

10 MAY 94

GPS READINGS - TRIMBLE NAVIGATION
TRANSPAK II GPS
SERIAL # 3234 L07475
W58442

MELROSE AFR

WELL, LAT 34 16 38
LON 103 47 04

OB/OD CENTER BOX, LAT 34 16 38
LON 103 47 10

NE FENCE CORNER, LAT 34 16 41
LON 103 47 03

NW FENCE CORNER, LAT 34 16 42
LON 103 47 12

WEST GATE S. CORNER, LAT 34 16 39
LON 103 47 13

SW FENCE CORNER, LAT 34 16 35
LON 103 47 13

SE FENCE CORNER, LAT 34 16 34
LON 103 47 03