R-010-206.1

370

WASTE PIT AREA STORMWATER CONTROL REMOVAL ACTION SAMPLING DATA PACKAGE

DOCUMENT DATE 03/27/92

[redacted]

Attachment 1

WASTE PIT AREA STORMWATER RUNOFF
CONTROL REMOVAL ACTION
SAMPLING DATA PACKAGE

3702

The U. S. EPA requested a data package for the ongoing removal action to include the following:

"(1) the analytical results for hazardous substance list (HSL) analyses traceable to sample location; (2) figure(s) showing the location of samples; (3) figure(s) showing the areas that have been excavated; and (4) a description of the excess soil stockpile contents."

Item 1: Appendix A to this document is the analytical data from the forty-four samples collected from the vicinity of the removal action.

Item 2: Appendix A also includes the sample location plan which traces analyses to the sample points (1 through 44).

Item 3: The sample location plan included with Appendix A highlights the areas that have been excavated.

Item 4: The excavated soil was analyzed for full TCLP and total uranium and total thorium radiological parameters. The analytical results performed on the soil indicated concentrations below the requirements of the subject work plan.

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SAMPLE LOCATION	FMPC SITE COORDINATES		SAMPLE NO. (7)			
	EAST COORD.	SOUTH COORD.	0-6"	6"-12"	12"-18"	18"-24"
PA 1	1400.00'	300.00'	61001	61003	61005	61007
			61002	61004	61006	NA
PA 2	1500.00'	400.00'	61008	61010	61012	61014
			61009	61011	61013	NA
PA 3	1500.00'	500.00'	61015	61017	61019	61021
			61016	61018	61020	NA
PA 4	1500.00'	700.00'	61022	61024	61026	61028
			61023	61025	61027	NA
PA 5 *	1500.00'	900.00'	61029	61031	61033	61035
			61030	61032	61034	NA
PA 6	1300.00'	1100.00'	61036	61038	61040	61042
			61037	61039	61041	NA
PA 7	1300.00'	1300.00'	61043	61045	61047	61049
			61044	61046	61048	NA
PA 8	1400.00'	1500.00'	61050	61052	61054	61056
			61051	61053	61055	NA
PA 9	1400.00'	1600.00'	61057	NA	NA	NA
			61058	NA	NA	NA
PA 10 *	1500.00'	1600.00'	61064	61066	61068	61070
			61065	61067	61069	NA
PA 11	1500.00'	1700.00'	61071	61073	61075	61077
			61072	61074	61076	NA
PA 12	1600.00'	1700.00'	61078	61080	61082	61084
			61079	61081	61083	NA
PA 13	1700.00'	1700.00'	61085	61087	61089	61091
			61086	61088	61090	NA
PA 14	1900.00'	1700.00'	61092	61094	61096	61098
			61093	61095	61097	NA
PA 15	2100.00'	1700.00'	61099	61101	61103	61105
			61100	61102	61104	NA
PA 16	2100.00'	1600.00'	61106	61108	61110	61112
			61107	61109	61111	NA
PA 17	2200.00'	1600.00'	61113	61115	61117	61119
			61114	61116	61118	NA
PA 18	1800.00'	1900.00'	61120	61122	61124	61126
			61121	61123	61125	NA
PA 19 *	1800.00'	2100.00'	61127	61129	61131	61133
			61128	61130	61132	NA
PA 20 *	1800.00'	2300.00'	61134	61136	61138	61140
			61135	61137	61139	NA
PA 21	1800.00'	2500.00'	61141	61143	61145	61147
			61142	61144	61146	NA
PA 22	1800.00'	2700.00'	61148	61149	61152	61156
			61150	61151	61153	NA
PA 23	1900.00'	2500.00'	61155	61157	61159	61315
			61310	61158	61160	NA
PA 24	2100.00'	2500.00'	61162	61164	61166	61168
			61163	61165	61167	NA
PA 25	2200.00'	2600.00'	61169	61171	61173	61175
			61170	61172	61174	NA
PA 26	2300.00'	2500.00'	61176	61178	61180	61182
			61177	61179	61181	NA
PA 27 *	2200.00'	2400.00'	61183	61185	61187	61189
			61184	61186	61188	NA
PA 28	2400.00'	2400.00'	61190	61192	61194	61196
			61191	61193	61195	NA
PA 29	2115.00'	2300.00'	61197	61199	61201	61203
			61198	61200	61202	NA
PA 30	2300.00'	2300.00'	61204	61206	61208	61210
			61205	61207	61209	NA
PA 31 *	2200.00'	2200.00'	61211	61213	61215	61217
			61212	61214	61216	NA
PA 32	2400.00'	2200.00'	61220	61222	61223	61224
			61221	NA	NA	NA
PA 33 *	2079.82'	2119.95'	61218	61227	61229	61225
			61219	61228	61230	NA
PA 34	2300.00'	2100.00'	61232	61234	61236	61238
			61233	61235	61237	NA
PA 35 *	2200.00'	2000.00'	61239	61241	61243	61245
			61240	61242	61244	NA
PA 36	2400.00'	2025.00'	61246	61248	61250	61252
			61247	61249	61251	NA
PA 37	2100.00'	1900.00'	61253	61255	61257	61258
			61259	61256	NA	NA
PA 38	2800.00'	600.00'	61260	61262	61264	61266
			61261	61263	61265	NA
PA 39	2900.00'	600.00'	61267	61269	61271	61273
			61268	61270	61272	NA
PA 40 *	2900.00'	700.00'	61274	61276	61278	61280
			61275	61277	61279	NA
PA 41	3000.00'	800.00'	61281	61283	61285	61287
			61282	61284	61286	NA
PA 42 *	2900.00'	900.00'	61288	61290	61292	61294
			61289	61291	61293	NA
PA 43 *	2800.00'	1000.00'	61295	61297	61299	61301
			61296	61298	61300	NA
PA 44	2900.00'	1100.00'	61302	61304	61306	61308
			61303	61305	61307	NA

ICL #4 ICF MS

Table EDT-4

EPA CLP ORGANIC QUALIFIERS/RECOVERY FLAGS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one of more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration reported in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

F - Estimated value due to a confirmed compound which is off-scale in both columns.

X - A flag that FORMASTER III CLP software automatically inserts to indicate that the data was entered manually.

Y - Indistinguishable isomer in tentatively identified compounds.

Z - No estimated value reported. or an elevated CRQL reported because matrix effects interfere with or obscure the compound on one or both columns. In either situation, the compound does not confirm as a positive identification.

• - Values outside of contract required QC limits.

Table EDT-5

EPA CLP INORGANTIC QUALIFIERS

U	-	Indicates compound was analyzed for but not detected.
B	-	The reported value is less than the Contract Required Detection Limit (CRDL) but greater that the Instrument Detection Limit (IDL).
E	-	The reported value is estimated because of the presence of interference.
M	-	Duplicate injection precision not met.
N	-	Spiked sample recovery not within control limits.
S	-	The reported value was determined by the Method of Standard Additions.
W	-	Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
G	-	Native analyte > 4 times spike added, therefore acceptance criteria do not apply.
X	-	Detection limit is higher than normal due to sample matrix interferences.
•	-	Duplicate analysis not within control limits.
+	-	Correlation coefficient for the MSA is less than .995.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

EDT SUFFIX CODES FOR "LAB SAMPLE" AND "CLIENT SAMPLE" NUMBERS

MS	-	Matrix Spike (sample spiked before prep)
MSD	-	Matrix Spike Duplicate (duplicate prep/analysis of spiked sample)
D	-	Duplicate (duplicate prep/analysis of a sample--could also have a D1, D2, etc.)
S	-	Spike (spiked before prep)
SD	-	Spike Duplicate (duplicate prep/analysis of a spiked sample)
S1	-	Original Spike (same a S--only used if there is an S2)
S2	-	Post Digestion Spike (original sample spiked after prep)
R	-	Reprepped (could be combined with other suffix codes, i.e. RMS, RD or could also have a R1, R2, etc.)
A	-	Replicate Analysis (additional analysis of original prepped sample--could also have a A1, A2, etc.)
U	-	Unfiltered Sample (unfiltered sample prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. UMS, UMSD, UD, etc.
F	-	Filtered Sample (sample filtered before prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. FMS, FMSD, FD, etc.)
BK	-	Back sorbent section of sampler tube
FR	-	Front sorbent section of sampler tube
DL	-	Dilution (original sample diluted for analysis)
C	-	Confirmation Analysis (additional analysis of original prepped sample using a different column or detector as instructed under one method)

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.:61002_

SOW No.: 788__

EPA Sample No.	Lab Sample ID
_61002_____	__FF_6301_____
_61009_____	__FF_6302_____
_61016_____	__FF_6303_____
_61023_____	__FF_6304_____
_61030_____	__FF_6305_____
_61037_____	__FF_6306_____
_61058_____	__FF_6308_____
_61072_____	__FF_6307_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO_

If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Soomi L. Chung Name: Soomi L. Chung

Date: 5-2-91 Title: Group Leader

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INORGANIC ANALYSES DATA SHEET

3702

EPA SAMPLE NO.

61002

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6301

Level (low/med): Date Received: 04/23/91

% Solids: 80.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8200			P
7440-36-0	Antimony	28.4		N	P
7440-38-2	Arsenic	5.7		SN	F
7440-39-3	Barium	49.2			P
7440-41-7	Beryllium	0.73	B		P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	64300			P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	11.8	B		P
7440-50-8	Copper	19.9			P
7439-89-6	Iron	21300			P
7439-92-1	Lead	8.9		+N	F
7439-95-4	Magnesium	22700			P
7439-96-5	Manganese	413			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	41.3			P
7440-09-7	Potassium	1070	B		A
7782-49-2	Selenium	0.49	U		F
7440-22-4	Silver	10.4		•	P
7440-23-5	Sodium	88.0	B		P
7440-28-0	Thallium	0.49	U		F
7440-62-2	Vanadium	23.8			P
7440-66-6	Zinc	49.6		E	P
7439-98-7	Molybdenum	4.7			P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61009

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6302

Level (low/med): Date Received: 04/23/91

% Solids: 91.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2660			P
7440-36-0	Antimony	22.6		N	P
7440-38-2	Arsenic	4.1		SN	F
7440-39-3	Barium	31.4	B		P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	137000			P
7440-47-3	Chromium	7.8			P
7440-48-4	Cobalt	6.6	B		P
7440-50-8	Copper	12.1			P
7439-89-6	Iron	6670			P
7439-92-1	Lead	34.3		SN	F
7439-95-4	Magnesium	21200			P
7439-96-5	Manganese	423			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	24.8			P
7440-09-7	Potassium	434	B		A
7782-49-2	Selenium	0.44	U		F
7440-22-4	Silver	7.8		*	P
7440-23-5	Sodium	137	B		P
7440-28-0	Thallium	0.44	U		F
7440-62-2	Vanadium	11.2			P
7440-66-6	Zinc	21.9		E	P
7439-98-7	Molybdenum	3.7			P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61016

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6303

Level (low/med): Date Received: 04/23/91

% Solids: 89.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4320			P
7440-36-0	Antimony	30.8		N	P
7440-38-2	Arsenic	4.7		SN	F
7440-39-3	Barium	42.6	B		P
7440-41-7	Beryllium	0.67	B		P
7440-43-9	Cadmium	7.7			P
7440-70-2	Calcium	124000			P
7440-47-3	Chromium	11.3			P
7440-48-4	Cobalt	9.6	B		P
7440-50-8	Copper	15.7			P
7439-89-6	Iron	13200			P
7439-92-1	Lead	7.9		SN	F
7439-95-4	Magnesium	38900			P
7439-96-5	Manganese	317			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	28.4			P
7440-09-7	Potassium	880	B		A
7782-49-2	Selenium	0.44	U		F
7440-22-4	Silver	9.4		*	P
7440-23-5	Sodium	134	B		P
7440-28-0	Thallium	0.44	U		F
7440-62-2	Vanadium	16.4			P
7440-66-6	Zinc	35.3		E	P
7439-98-7	Molybdenum	5.7			P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61023

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6304

Level (low/med): Date Received: 04/23/91

% Solids: 80.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7470			P
7440-36-0	Antimony	27.8		N	P
7440-38-2	Arsenic	6.4		SN	F
7440-39-3	Barium	52.5			P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	5.7			P
7440-70-2	Calcium	99100			P
7440-47-3	Chromium	16.3			P
7440-48-4	Cobalt	10.9	B		P
7440-50-8	Copper	18.3			P
7439-89-6	Iron	17800			P
7439-92-1	Lead	10.5		N	F
7439-95-4	Magnesium	21900			P
7439-96-5	Manganese	438			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	27.8			P
7440-09-7	Potassium	1210	B		A
7782-49-2	Selenium	0.50	U		F
7440-22-4	Silver	10.3		*	P
7440-23-5	Sodium	109	B		P
7440-28-0	Thallium	0.68	B		F
7440-62-2	Vanadium	22.2			P
7440-66-6	Zinc	42.5		E	P
7439-98-7	Molybdenum	4.6			P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61030

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6305

Level (low/med): Date Received: 04/23/91

% Solids: 78.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9410			P
7440-36-0	Antimony	21.3		N	P
7440-38-2	Arsenic	4.2		SN	F
7440-39-3	Barium	64.7			P
7440-41-7	Beryllium	0.69	B		P
7440-43-9	Cadmium	3.4			P
7440-70-2	Calcium	26400			P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	11.1	B		P
7440-50-8	Copper	14.6			P
7439-89-6	Iron	18900			P
7439-92-1	Lead	12.1		N	F
7439-95-4	Magnesium	8650			P
7439-96-5	Manganese	655			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	27.9			P
7440-09-7	Potassium	1060	B		A
7782-49-2	Selenium	0.50	U		F
7440-22-4	Silver	7.2		*	P
7440-23-5	Sodium	92.5	B		P
7440-28-0	Thallium	0.50	U	W	F
7440-62-2	Vanadium	23.8			P
7440-66-6	Zinc	46.7		E	P
7439-98-7	Molybdenum	3.0			P
	Cyanide	0.13	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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3702

EPA SAMPLE NO.

61037

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6306

Level (low/med): Date Received: 04/23/91

% Solids: 89.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2580			P
7440-36-0	Antimony	22.7		N	P
7440-38-2	Arsenic	4.2		SN	F
7440-39-3	Barium	27.2	B		P
7440-41-7	Beryllium	0.58	B		P
7440-43-9	Cadmium	4.6			P
7440-70-2	Calcium	143000			P
7440-47-3	Chromium	6.1			P
7440-48-4	Cobalt	7.0	B		P
7440-50-8	Copper	11.4			P
7439-89-6	Iron	7180			P
7439-92-1	Lead	8.4		SN	F
7439-95-4	Magnesium	19900			P
7439-96-5	Manganese	426			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	19.7			P
7440-09-7	Potassium	448	B		A
7782-49-2	Selenium	0.45	U		F
7440-22-4	Silver	7.6		*	P
7440-23-5	Sodium	135	B		P
7440-28-0	Thallium	0.45	U		F
7440-62-2	Vanadium	10.9			P
7440-66-6	Zinc	28.9		E	P
7439-98-7	Molybdenum	3.9			P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61058

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6308

Level (low/med): Date Received: 04/23/91

% Solids: 82.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5800			P
7440-36-0	Antimony	28.0		N	P
7440-38-2	Arsenic	3.9		SN	F
7440-39-3	Barium	51.9			P
7440-41-7	Beryllium	0.72	B		P
7440-43-9	Cadmium	5.7			P
7440-70-2	Calcium	101000			P
7440-47-3	Chromium	14.4			P
7440-48-4	Cobalt	10.6	B		P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	14000			P
7439-92-1	Lead	7.9		SN	F
7439-95-4	Magnesium	24800			P
7439-96-5	Manganese	556			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	31.9			P
7440-09-7	Potassium	951	B		A
7782-49-2	Selenium	0.48	U		F
7440-22-4	Silver	10.3		•	P
7440-23-5	Sodium	161	B		P
7440-28-0	Thallium	0.48	U		F
7440-62-2	Vanadium	18.9			P
7440-66-6	Zinc	40.9		E	P
7439-98-7	Molybdenum	4.4			P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

SR 5/2/91

U.S. EPA - CLP

3702

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61072

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Lab Sample ID: FF 6307

Level (low/med): Date Received: 04/23/91

% Solids: 86.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5330			P
7440-36-0	Antimony	20.3		N	P
7440-38-2	Arsenic	3.5		SN	F
7440-39-3	Barium	48.2			P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	4.0			P
7440-70-2	Calcium	73900			P
7440-47-3	Chromium	13.3			P
7440-48-4	Cobalt	8.5	B		P
7440-50-8	Copper	13.8			P
7439-89-6	Iron	15700			P
7439-92-1	Lead	7.8		SN	F
7439-95-4	Magnesium	12500			P
7439-96-5	Manganese	707			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	20.8			P
7440-09-7	Potassium	686	B		A
7782-49-2	Selenium	0.45	U		F
7440-22-4	Silver	9.4		•	P
7440-23-5	Sodium				NR
7440-28-0	Thallium	0.45	U	W	F
7440-62-2	Vanadium	18.0			P
7440-66-6	Zinc	27.7		E	P
7439-98-7	Molybdenum	3.3			P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	40765.87	101.9	40000.0	40812.66	102.0	40632.85	101.6	P
Antimony	1000.0	1028.00	102.8	1000.0	1035.00	103.5	1033.00	103.3	P
Arsenic	30.0	30.23	100.8	30.0	28.32	94.4			F
Barium	1000.0	964.76	96.5	1000.0	956.63	95.7	962.30	96.2	P
Beryllium	500.0	527.83	105.6	500.0	531.16	106.2	534.08	106.8	P
Cadmium	1000.0	1007.84	100.8	1000.0	1027.89	102.8	1008.12	100.8	P
Calcium	40000.0	40756.71	101.9	40000.0	41569.37	103.9	41248.39	103.1	P
Chromium	4000.0	4079.80	102.0	4000.0	4142.91	103.6	4112.20	102.8	P
Cobalt	2000.0	1984.82	99.2	2000.0	2006.24	100.3	1993.59	99.7	P
Copper	4000.0	3937.84	98.4	4000.0	3908.61	97.7	3902.91	97.6	P
Iron	40000.0	39522.00	98.8	40000.0	39760.62	99.4	39711.49	99.3	P
Lead	25.0	25.41	101.6	25.0	25.98	103.9	24.56	98.2	F
Magnesium	40000.0	41634.40	104.1	40000.0	41530.04	103.8	41566.82	103.9	P
Manganese	1000.0	1044.14	104.4	1000.0	1057.40	105.7	1053.58	105.4	P
Mercury	4.0	4.14	103.5	4.0	3.65	91.2			CV
Nickel	4000.0	4164.82	104.1	4000.0	4203.88	105.1	4165.80	104.1	P
Potassium	2500.0	2734.00	109.4	2500.0	2726.00	109.0	2697.00	107.9	A
Selenium	25.0	25.79	103.2	25.0	25.95	103.8			F
Silver	1000.0	1018.06	101.8	1000.0	1028.84	102.9	1013.10	101.3	P
Sodium	40000.0	40287.48	100.7	40000.0	39811.93	99.5	40029.19	100.1	P
Thallium	25.0	25.41	101.6	25.0	25.60	102.4	25.53	102.1	F
Vanadium	1000.0	1014.95	101.5	1000.0	1022.14	102.2	1014.47	101.4	P
Zinc	4000.0	3996.14	99.9	4000.0	4101.69	102.5	4060.19	101.5	P
Molybdenum	4000.0	4124.43	103.1	4000.0	4156.95	103.9	4119.54	103.0	P
Cyanide	100.0	102.24	102.2	100.0	101.48	101.5	102.72	102.7	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	39910.53	99.8			P
Antimony				1000.0	1018.00	101.8			P
Arsenic	30.0	29.45	98.2	30.0	29.21	97.4			F
Barium				1000.0	932.06	93.2			P
Beryllium				500.0	531.85	106.4			P
Cadmium				1000.0	1004.94	100.5			P
Calcium				40000.0	41095.00	102.7			P
Chromium				4000.0	4103.78	102.6			P
Cobalt				2000.0	1974.64	98.7			P
Copper				4000.0	3823.94	95.6			P
Iron				40000.0	39378.06	98.4			P
Lead				25.0	23.91	95.6	25.08	100.3	F
Magnesium				40000.0	41038.98	102.6			P
Manganese				1000.0	1045.24	104.5			P
Mercury									NR
Nickel				4000.0	4110.98	102.8			P
Potassium									NR
Selenium	25.0	26.08	104.3	25.0	26.92	107.7	26.16	104.6	F
Silver				1000.0	1000.10	100.0			P
Sodium				40000.0	39802.44	99.5			P
Thallium				25.0	24.00	96.0			F
Vanadium				1000.0	1004.53	100.5			P
Zinc				4000.0	4109.44	102.7			P
Molybdenum				4000.0	4070.09	101.8			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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5/4/91

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	30.0	30.47	101.6	30.0	30.04	100.1	30.54	101.8	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	25.96	103.8	23.46	93.8	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				25.0	25.52	102.1			F
Silver									NR
Sodium									NR
Thallium	25.0	25.16	100.6	25.0	23.61	94.4			F
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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U.S. EPA - CLP

3702

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Initial Calibration Source: NBS

Continuing Calibration Source: NBS

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				30.0	30.16	100.5			F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	25.0	24.61	98.4	25.0	25.50	102.0	25.08	100.3	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium	25.0	25.78	103.1	25.0	26.58	106.3			F
Silver									NR
Sodium									NR
Thallium	25.0	26.12	104.5	25.0	25.71	102.8			F
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source: SPEX

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	109.25	91.0	123.46	102.9
Arsenic	10.0	10.08	100.8					
Barium								
Beryllium				10.0	10.00	100.0	10.00	100.0
Cadmium				10.0	9.83	98.3	12.13	121.3
Calcium								
Chromium				20.0	19.72	98.6	23.92	119.6
Cobalt				100.0	102.40	102.4	104.12	104.1
Copper				50.0	47.08	94.2	46.67	93.3
Iron								
Lead	3.0	3.19	106.3					
Magnesium								
Manganese				30.0	29.14	97.1	29.14	97.1
Mercury	0.2	0.11	55.0					
Nickel				80.0	87.15	108.9	87.85	109.8
Potassium								
Selenium	5.0	4.45	89.0					
Silver				20.0	18.50	92.5	21.81	109.0
Sodium								
Thallium	10.0	7.06	70.6					
Vanadium				100.0	99.85	99.8	99.99	100.0
Zinc				40.0	42.61	106.5	46.19	115.5

FORM II (PART 2) - IN

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3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	4/24/91 Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U	30.0	U	P
Arsenic	2.0	U	2.0	U					2.0	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Calcium	20.0	U	27.2	B	119.9	B	61.2	B	98.0	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	10.0	U	10.0	U	10.0	U	20.1	B	13.5	B	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U					0.2	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P
Potassium	100.0	U	100.0	U	100.0	U			100.0	U	A
Selenium	2.0	U	2.0	U					2.0	U	F
Silver	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	P
Thallium	2.0	U	-2.5	B	2.0	U	2.0	U	-2.4	B	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Zinc	5.0	U	5.0	U	5.0	U	6.3	B	5.0	U	P
Molybdenum	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cyanide	2.0	U	2.0	U	2.0	U			2.0	U	AS

FORM III - IN

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3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_____ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	4/25/91 Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	2.0	U	2.0	U	2.0	U	2.0	U			F
Silver											NR
Sodium											NR
Thallium	2.0	U	2.0	U							F
Vanadium											NR
Zinc											NR
Molybdenum											NR
Cyanide									2.0	U	AS

FORM III - IN

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3
BLANKS

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	2.0	U	2.0	U							F
Silver											NR
Sodium											NR
Thallium	2.0	U	2.0	U							F
Vanadium											NR
Zinc											NR
Molybdenum											NR
Cyanide											NR

FORM III - IN

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No: _____ SDG No.: 61002_

ICP ID Number: TJA ICAP 61_ ICS Source: PEPURE_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	498080	502507.3	100.5	491569	490223.7	98.0
Antimony								
Arsenic								
Barium		500		446.0	89.2		431.5	86.3
Beryllium		500		456.7	91.3		453.9	90.8
Cadmium		1000		997.4	99.7		990.4	99.0
Calcium	500000	500000	484214	487308.9	97.5	480383	483801.6	96.8
Chromium		500		466.8	93.4		464.1	92.8
Cobalt		500		488.1	97.6		483.7	96.7
Copper		500		485.8	97.2		470.6	94.1
Iron	200000	200000	195964	197480.5	98.7	194276	195285.7	97.6
Lead								
Magnesium	500000	500000	463382	465372.9	93.1	458473	460203.4	92.0
Manganese		500		462.0	92.4		457.7	91.5
Mercury								
Nickel		1000		989.9	99.0		979.1	97.9
Potassium								
Selenium								
Silver		1000		949.7	95.0		937.0	93.7
Sodium								
Thallium								
Vanadium		500		523.2	104.6		515.9	103.2
Zinc		1000		951.1	95.1		961.7	96.2

FORM IV - IN

7/88

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: IT_OAK_RIDGE Contract: FERNALD 66957 S

Lab Code: ITMWL Case No.: 36659 SAS No.: _____ SDG No.: 61002

Matrix: SOIL Level (low/med): _____

% Solids for Sample: 80.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	63.4988		24.5757		124.07	31.4	N	P
Arsenic	75-125	13.7814		7.7758		9.73	61.7	N	F
Barium	75-125	607.6923		141.7866		496.28	93.9		P
Beryllium	75-125	12.2804		0.8752	B	12.41	91.9		P
Cadmium	75-125	15.1117		3.1166		12.41	96.7		P
Calcium									NR
Chromium	75-125	65.2357		19.8015		49.63	91.5		P
Cobalt	75-125	127.7171		13.6625		124.07	91.9		P
Copper	75-125	77.0720		22.1985		62.03	88.5		P
Iron									NR
Lead	75-125	22.4833		16.1806		4.87	129.4	N	F
Magnesium									NR
Manganese		743.1762		745.6576		124.07	-2.0		P
Mercury	75-125	0.6677		0.1241	U	0.56	119.2		CV
Nickel	75-125	148.9826		39.3052		124.07	88.4		P
Potassium									NR
Selenium	75-125	2.2916		0.4914	U	2.43	94.3		F
Silver	75-125	14.1216		2.4814	U	12.41	113.8		P
Sodium									NR
Thallium	75-125	9.8599		0.4914	U	12.16	81.1		F
Vanadium	75-125	141.5385		32.0099		124.07	88.3		P
Zinc	75-125	176.7742		64.8883		124.07	90.2		P
Molybdenum	75-125	217.7171		3.6005		248.14	86.3		P
Cyanide	75-125	6.8015		0.3862	B	6.20	103.5		AS

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

66957 A

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix: SOIL Level (low/med):

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		296.80		99.04		200.0	98.9		P
Arsenic		49.82		31.65		20.0	90.8		F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
pper									NR
on									NR
Lead		89.28		65.86		20.0	117.1		F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

Comments:

FORM V (Part 2) - IN

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U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

66957 D

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Level (low/med):

% Solids for Sample: 80.6 % Solids for Duplicate: 80.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		14287.8412		14034.7395		1.8		P
Antimony	14.9	24.5757		26.3772		7.1		P
Arsenic	2.5	7.7758		9.0447		15.1		F
Barium	49.6	141.7866		139.6526		1.5		P
Beryllium		0.8752	B	0.8591	B	1.9		P
Cadmium	1.2	3.1166		3.5112		11.9		P
Calcium	1240.7	4746.8983		4873.4491		2.6		P
Chromium		19.8015		20.6079		4.0		P
Cobalt	12.4	13.6625		14.8958		8.6		P
Copper	6.2	22.1985		22.8710		3.0		P
Iron		30446.6501		30818.8586		1.2		P
Lead		16.1806		15.3921		5.0		F
Magnesium	1240.7	3952.8536		3977.6675		0.6		P
Manganese		745.6576		737.4690		1.1		P
Mercury		0.1241	U	0.1241	U			CV
Nickel	9.9	39.3052		38.4367		2.2		P
Potassium		892.0596	B	885.6079	B	0.7		A
Selenium		0.4914	U	0.4963	U			F
Silver		2.4814	U	3.1538		200.0	*	P
Sodium		79.3797	B	86.7494	B	8.9		P
Thallium		0.4914	U	0.4963	U			F
Vanadium	12.4	32.0099		32.8040		2.5		P
Zinc		64.8883		64.9132		0.0		P
Molybdenum		3.6005		4.3648		19.2		P
Cyanide		0.3862	B	0.1209	U	200.0		AS

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LABORATORY CONTROL SAMPLE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Solid LCS Source: _____

Aqueous LCS Source: SPEX_____

Analyte	Aqueous (ug/L) True	Found 4/24/91	Found w 5/2/91	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2004.34		100.2						
Antimony	500.0	520.84		104.2						
Arsenic	40.0	37.59		94.0						
Barium	2000.0	1930.08		96.5						
Beryllium	50.0	47.45		94.9						
Cadmium	50.0	53.52		107.0						
Calcium	2000.0	2147.46		107.4						
Chromium	200.0	195.52		97.8						
Cobalt	500.0	494.27		98.9						
Copper	250.0	232.92		93.2						
Iron	1000.0	1011.69		101.2						
Lead	20.0	20.20		101.0						
Magnesium	2000.0	2100.90		105.0						
Manganese	500.0	484.30		96.9						
Mercury										
Nickel	500.0	502.86		100.6						
Potassium	2000.0	2029.00		101.4						
Selenium	10.0	9.75		97.5						
Silver	50.0	48.54		97.1						
Sodium	2000.0	1992.01		99.6						
Thallium	50.0	56.42		112.8						
Vanadium	500.0	493.14		98.6						
Zinc	500.0	473.87		94.8						
Molybdenum	1000.0	1011.38		101.1						
Cyanide	100.0	96.98		97.0						

FORM VII - IN

7/88

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U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

Solid LCS Source: _____

Aqueous LCS Source: SPEX_____

Analyte	Aqueous (ug/L) True	Found 4/25/91	Found 8. 5/2/91	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Magnesium										
Manganese										
Mercury										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Thallium										
Vanadium										
Zinc										
Molybdenum										
Cyanide	100.0	96.06	96.1							

FORM VII - IN

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U.S. EPA - CLP

3702

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STANDARD ADDITION RESULTS

Lab Name: IT_OAK_RIDGE_____ Contract:FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.:_____ SDG No.:61002_

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
61002	AS	9.760	5.00	14.10	10.00	18.44	15.00	22.34	23.4	0.9996	
61009	AS	13.46	5.00	16.90	10.00	20.68	15.00	24.18	18.6	0.9998	
61016	AS	18.77	10.00	28.41	15.00	32.71	20.00	36.43	21.4	0.9984	
61023	AS	21.97	10.00	30.48	15.00	33.77	20.00	39.22	25.9	0.9973	
61030	AS	16.94	10.00	27.16	15.00	31.50	20.00	37.52	16.6	0.9989	
61037	AS	16.31	10.00	25.61	15.00	29.36	20.00	34.02	18.7	0.9993	
61058	AS	15.17	10.00	24.77	15.00	29.52	20.00	34.02	16.1	0.9999	
61072	AS	13.90	10.00	24.68	15.00	28.63	20.00	32.66	15.3	0.9965	
61002	PB	6.740	5.00	13.42	10.00	17.80	15.00	22.24	36.4	0.9941	+
61009	PB	13.86	5.00	17.93	10.00	22.80	15.00	26.90	156.8	0.9994	
61016	PB	12.39	5.00	17.61	10.00	22.98	15.00	27.85	36.1	0.9998	
61037	PB	12.19	5.00	17.01	10.00	22.42	15.00	26.68	37.6	0.9990	
61058	PB	11.24	5.00	16.35	10.00	21.85	15.00	26.68	32.6	0.9997	
61072	PB	11.03	5.00	16.55	10.00	21.35	15.00	25.93	34.2	0.9991	

FORM VIII - IN

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U.S. EPA - CLP

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ICP SERIAL DILUTION

3702

EPA SAMPLE NO.

66957 L

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

Matrix (soil/water): SOIL Level (low/med):

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	57580.00		58700.00		1.9		P
Antimony	99.04		150.00	U	100.0		P
Arsenic							
Barium	571.40		582.00	B	1.9		P
Beryllium	3.53	B	10.00	U	100.0		P
Cadmium	12.56		11.50	B	8.4		P
Calcium	19130.00		19550.00	B	2.2		P
Chromium	79.80		77.90		2.4		P
Cobalt	55.06		55.05	B	0.0		P
Copper	89.46		100.25	B	12.1		P
Iron	122700.00		112400.00		8.4		P
Lead							
Magnesium	15930.00		16435.00	B	3.2		P
Manganese	3005.00		3077.00		2.4		P
Mercury							
Nickel	158.40		162.30	B	2.5		P
Potassium							
Selenium							
Silver	10.00	U	50.00	U			P
Sodium	319.90	B	500.00	U	100.0		P
Thallium							
Vanadium	129.00		129.65	B	0.5		P
Zinc	261.50		288.45		10.3	E	P
Molybdenum	14.51		50.00	U	100.0		P
Cyanide							

FORM IX - IN

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U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: TJA_ICAP_61 Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	60.0	P
Antimony	206.84		60	30.0	P
Arsenic			10		NR
Barium	493.41		200	2.0	P
Beryllium	313.04		5	2.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		50	10.0	P
Copper	324.75		25	10.0	P
Iron	259.94		100	10.0	P
Lead			3		NR
Magnesium	279.08		5000	50.0	P
Manganese	257.61		15	2.0	P
Mercury			0.2		NR
Nickel	231.60		40	20.0	P
Potassium			5000		NR
Selenium	196.03		5	80.0	P
Silver	328.07		10	10.0	P
Sodium	589.00		5000	100.0	P
Thallium			10		NR
Vanadium	292.40		50	10.0	P
Zinc	213.86		20	5.0	P
Molybdenum	202.03			10.0	P
Cyanide			10		NR

Comments:

FORM X - IN 7/88

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U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA1_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	3	2.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

SKY 5/2/91

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA2_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	2.0	F
Silver			10		NR
Sodium			5000		NR
Thallium	276.80	BZ	10	2.0	F
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide			10		NR

Comments:

FORM X - IN

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: Date: 03/28/91

Flame AA ID Number : TJA_SH_22

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium	766.50	BS	5000	100.0	A
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide	570.00		10	2.0	AS

Comments:

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Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: Date: 03/28/91

Flame AA ID Number : BUCK_400

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70	BD	0.2	0.2	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide			10		NR

Comments:

U.S. EPA - CLP

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11A

ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

ICP ID Number: TJA ICAP 61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS
Aluminum	308.22	0.0000000	0.0003700	0.0000000	0.0002000	0.0000000
Antimony	206.84	0.0031000	0.0000000	0.0005600	0.0002400	0.0000000
Arsenic	189.04	0.0020000	0.0001000	0.0008000	0.0003900	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000500	0.0000000	0.0072000
Calcium	317.93	0.0000000	0.0000000	0.0003700	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0001400	0.0001000	0.0001300	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0001000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000900	0.0000000	0.0001000	0.0000000
Lead	220.35	0.0012000	0.0000400	0.0007000	0.0004000	0.0000000
Magnesium	279.08	0.0000000	0.0005400	0.0009000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000500	0.0000500	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0004600	0.0003800	0.0000000
Potassium						
Selenium	196.03	0.0036000	0.0000000	0.0015000	0.0004000	0.0000000
Silver	328.07	0.0000000	0.0001000	0.0000000	0.0000000	0.0000000
Sodium	589.00	0.0003600	0.0002000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0017000	0.0000000	0.0001000	0.0000000
Vanadium	292.40	0.0000000	0.0000600	0.0000000	0.0000000	0.0000000
Zinc	213.86	0.0000000	0.0000000	0.0001800	0.0000000	0.0000000

Comments:

FORM XI (Part 1) - IN

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U.S. EPA - CLP

11B
ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659 SAS No.: _____ SDG No.: 61002_

ICP ID Number: TJA ICAP 61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : CO_	CR_	CU_	MN_	MO_
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0019000	0.0078000
Antimony	206.84	0.0000000	0.0076000	0.0000000	0.0003600	0.0071000
Arsenic	189.04	0.0000000	0.0065000	0.0000000	0.0008700	0.0043000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0010000	0.0000000	0.0005500	0.0011000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0004600	0.0006600
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0005500
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0016000	0.0004800
Lead	220.35	0.0020000	0.0000000	0.0015000	0.0009000	0.0028000
gnesium	279.08	0.0000000	0.0014000	0.0000000	0.0030000	0.0017000
nganese	257.61	0.0020000	0.0000000	0.0000000	0.0000000	0.0000000
ercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium						
Selenium	196.03	0.0020000	0.0000000	0.0000000	0.0013000	0.0014000
Silver	328.07	0.0000000	0.0000000	0.0000900	0.0001000	0.0000000
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0000000	0.0000000	0.0003000	0.0027000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0001000	0.0011000
Zinc	213.86	0.0000000	0.0000000	0.0046000	0.0000000	0.0000000

Comments:

FORM XI (Part 1) - IN 7/88

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11B
ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: _____ SDG No.: 61002

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : NI	TI	V	ZN	
Aluminum	308.22	0.0001300	0.0027000	0.0238000	0.0000000	
Antimony	206.84	0.0001600	0.0014000	0.0005700	0.0010000	
Arsenic	189.04	0.0001500	0.0008000	0.0009000	0.0000000	
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0055000	0.0000000	
Cadmium	228.80	0.0001400	0.0000000	0.0001000	0.0000000	
Calcium	317.93	0.0000000	0.0006000	0.0008000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0007000	0.0000000	
Cobalt	228.62	0.0007200	0.0013000	0.0000000	0.0000000	
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.94	0.0000000	0.0000000	0.0003300	0.0000000	
Lead	220.35	0.0017500	0.0007000	0.0004200	0.0000000	
Magnesium	279.08	0.0000000	0.0010000	0.0013000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Potassium						
Selenium	196.03	0.0002600	0.0003000	0.0007700	0.0000000	
Silver	328.07	0.0000000	0.0003000	0.0001900	0.0000000	
Sodium	589.00	0.0000000	0.0003000	0.0000000	0.0000000	
Thallium	377.57	0.1137000	0.0022000	0.0071000	0.0000000	
Vanadium	292.40	0.0000000	0.0005000	0.0000000	0.0000000	
Zinc	213.86	0.0032800	0.0000000	0.0001700	0.0000000	

Comments:

FORM XI (Part 1) - IN 7/88

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ICP Linear Ranges (Quarterly)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36659 SAS No.: SDG No.: 61002

ICP ID Number: TJA ICAP 61 Date: 03/28/91

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	10.00	1000000.0	
Antimony	10.00	10000.0	
Arsenic	10.00	1000000.0	
Barium	10.00	15000.0	
Beryllium	10.00	5000.0	
Cadmium	10.00	10000.0	
Calcium	10.00	700000.0	
Chromium	10.00	50000.0	
Cobalt	10.00	20000.0	
Copper	10.00	50000.0	
Iron	10.00	50000.0	
Lead	10.00	1000000.0	
Magnesium	10.00	350000.0	
Manganese	10.00	10000.0	
Mercury			NR
Nickel	10.00	50000.0	
Potassium			NR
Selenium	10.00	100000.0	
Silver	10.00	5000.0	
Sodium	10.00	400000.0	
Thallium	10.00	200000.0	
Vanadium	10.00	10000.0	
Zinc	10.00	50000.0	

Comments:

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PREPARATION LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36659 SAS No.: _____ SDG No.:61002_

Method: P_____

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61002	04/24/91	1.02	200
61009	04/24/91	1.01	200
61016	04/24/91	1.00	200
61023	04/24/91	1.02	200
61030	04/24/91	1.02	200
61037	04/24/91	1.02	200
61058	04/24/91	1.01	200
61072	04/24/91	1.01	200

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PREPARATION LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36659 SAS No.: _____ SDG No.:61002_

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61002	04/24/91	1.02	200
61009	04/24/91	1.00	200
61016	04/24/91	1.02	200
61023	04/24/91	1.00	200
61030	04/24/91	1.01	200
61037	04/24/91	1.00	200
61058	04/24/91	1.00	200
61072	04/24/91	1.02	200

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PREPARATION LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36659 SAS No.: _____ SDG No.:61002_

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61002	04/25/91	0.20	100
61009	04/25/91	0.20	100
61016	04/25/91	0.20	100
61023	04/25/91	0.20	100
61030	04/25/91	0.21	100
61037	04/25/91	0.20	100
61058	04/25/91	0.21	100
61072	04/25/91	0.20	100

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PREPARATION LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36659 SAS No.: _____ SDG No.:61002_

Method: AS

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61002	04/24/91	4.98	250
61009	04/24/91	5.10	250
61016	04/24/91	5.05	250
61023	04/24/91	4.97	250
61030	04/24/91	5.05	250
61037	04/24/91	5.11	250
61058	04/24/91	5.14	250
61072	04/24/91	5.08	250

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ANALYSIS RUN LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659_ SAS No.: _____ SDG No.:61002_

Instrument ID Number: TJA-ICAP-61__ Method: P_

Start Date: 04/25/91 End Date: 04/25/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZ	1.00	1052		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1056		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1059		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1203		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1208		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICV	1.00	1211		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1214																-		-							-
ZZZZZ	1.00	1217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICB	1.00	1229		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSA	1.00	1232		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSAB	1.00	1237		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CRI	1.00	1245		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1248																-		-							-
Z	1.00	1256		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZ	1.00	1301																-		-							-
ZZZZZ	1.00	1304		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1308		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
PBW	1.00	1311		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
LCSW	1.00	1315		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61002	1.00	1320		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61009	1.00	1324		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61016	1.00	1327		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61023	1.00	1331		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61030	1.00	1335		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61037	1.00	1338		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1342																-		-							-
61058	1.00	1345		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCV	1.00	1349		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1355																-		-							-
ZZZZZ	1.00	1358		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1402		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSA	1.00	1411		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-

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ANALYSIS RUN LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36659_ SAS No.: _____ SDG No.:61002_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 04/25/91 End Date: 04/25/91

EPA Sample No.	D/F	Time	% R	Analytes																						
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICSAB	1.00	1418		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
CRI	1.00	1422		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1427																									
CCV	1.00	1440		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1444																									
ZZZZZ	1.00	1447																									
CCB	1.00	1455		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1543																									
ZZZZZ	1.00	1547																									

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.:61079_

SOW No.: 788__

EPA Sample No.	Lab Sample ID
_61079_____	__FF_6445_____
_61079_D_____	__FF_6446D____
_61079_S_____	__FF_6447MS___
_61150_____	__FF_6448_____
_61220_____	__FF_6449_____
_61246_____	__FF_6450_____
_61254_____	__FF_6451_____
_61260_____	__FF_6452_____
_61268_____	__FF_6453_____
_61302_____	__FF_6454_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO_

If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Soomi L Chung Name: Soomi L. Chung

Date: 5-8-91 Title: Group Leader

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61079

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6445

Level (low/med): Date Received: 04/25/91

% Solids: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4170			P
7440-36-0	Antimony	22.6		N	P
7440-38-2	Arsenic	3.8			F
7440-39-3	Barium	34.0	B	E	P
7440-41-7	Beryllium	0.65	B		P
7440-43-9	Cadmium	5.3			P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	8.8			P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	15.4			P
7439-89-6	Iron	9610			P
7439-92-1	Lead	12.0			F
7439-95-4	Magnesium	24300			P
7439-96-5	Manganese	391		N	P
7439-97-6	Mercury	0.11	U		CV
7439-98-7	Molybdenum	4.1			P
7440-02-0	Nickel	22.4			P
7440-09-7	Potassium	692	B		A
7782-49-2	Selenium	0.45	U		F
7440-22-4	Silver	7.6			P
7440-23-5	Sodium	140	B		P
7440-28-0	Thallium	0.45	U	W	F
7440-62-2	Vanadium	13.9			P
7440-66-6	Zinc	59.2		E	P
	Cyanide	0.37	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61150

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6448

Level (low/med): Date Received: 04/25/91

% Solids: 85.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5450			P
7440-36-0	Antimony	22.6		N	P
7440-38-2	Arsenic	6.8		S	F
7440-39-3	Barium	49.8		E	P
7440-41-7	Beryllium	0.67	B		P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	73700			P
7440-47-3	Chromium	14.5			P
7440-48-4	Cobalt	8.7	B		P
7440-50-8	Copper	17.6			P
7439-89-6	Iron	16200			P
7439-92-1	Lead	12.0			F
7439-95-4	Magnesium	25000			P
7439-96-5	Manganese	457		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	4.6			P
7440-02-0	Nickel	26.8			P
7440-09-7	Potassium	530	B		A
7782-49-2	Selenium	0.46	U		F
7440-22-4	Silver	9.0			P
7440-23-5	Sodium	125	B		P
7440-28-0	Thallium	0.46	U	W	F
7440-62-2	Vanadium	20.6			P
7440-66-6	Zinc	37.4		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61220

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6449

Level (low/med): Date Received: 04/25/91

% Solids: 81.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7100			P
7440-36-0	Antimony	12.8	B	N	P
7440-38-2	Arsenic	6.2		S	F
7440-39-3	Barium	58.9		E	P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	2.3			P
7440-70-2	Calcium	19700			P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	8.9	B		P
7440-50-8	Copper	13.2			P
7439-89-6	Iron	16300			P
7439-92-1	Lead	20.0			F
7439-95-4	Magnesium	5710			P
7439-96-5	Manganese	526		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	2.4	U		P
7440-02-0	Nickel	16.3			P
7440-09-7	Potassium	726	B		A
7782-49-2	Selenium	0.48	U		F
7440-22-4	Silver	5.1			P
7440-23-5	Sodium	65.6	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	20.1			P
7440-66-6	Zinc	37.9		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61246

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6450

Level (low/med): Date Received: 04/25/91

% Solids: 82.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10100			P
7440-36-0	Antimony	18.2		N	P
7440-38-2	Arsenic	5.2		S	F
7440-39-3	Barium	79.1		E	P
7440-41-7	Beryllium	0.75	B		P
7440-43-9	Cadmium	3.4			P
7440-70-2	Calcium	24700			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	8.9	B		P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	19300			P
7439-92-1	Lead	14.7			F
7439-95-4	Magnesium	9220			P
7439-96-5	Manganese	473		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	2.7			P
7440-02-0	Nickel	22.9			P
7440-09-7	Potassium	868	B		A
7782-49-2	Selenium	0.48	U		F
7440-22-4	Silver	6.2			P
7440-23-5	Sodium	86.1	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	23.0			P
7440-66-6	Zinc	45.9		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61254

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6451

Level (low/med): Date Received: 04/25/91

% Solids: 86.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8770			P
7440-36-0	Antimony	20.6		N	P
7440-38-2	Arsenic	9.0		+	F
7440-39-3	Barium	75.2		E	P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	3.7			P
7440-70-2	Calcium	33100			P
7440-47-3	Chromium	16.7			P
7440-48-4	Cobalt	10	B		P
7440-50-8	Copper	18.2			P
7439-89-6	Iron	19200			P
7439-92-1	Lead	17.0		S	F
7439-95-4	Magnesium	10800			P
7439-96-5	Manganese	522		N	P
7439-97-6	Mercury	0.11	U		CV
7439-98-7	Molybdenum	3.2			P
7440-02-0	Nickel	23.2			P
7440-09-7	Potassium	1090	B		A
7782-49-2	Selenium	0.54	B		F
7440-22-4	Silver	7.1			P
7440-23-5	Sodium	86.2	B		P
7440-28-0	Thallium	0.46	U	W	F
7440-62-2	Vanadium	23.7			P
7440-66-6	Zinc	49.3		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61260

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6452

Level (low/med): Date Received: 04/25/91

% Solids: 82.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5410			P
7440-36-0	Antimony	26.4		N	P
7440-38-2	Arsenic	4.6		S	F
7440-39-3	Barium	56.3		E	P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	6.6			P
7440-70-2	Calcium	104000			P
7440-47-3	Chromium	12.4			P
7440-48-4	Cobalt	6.5	B		P
7440-50-8	Copper	16.7			P
7439-89-6	Iron	7160			P
7439-92-1	Lead	20.4		S	F
7439-95-4	Magnesium	32900			P
7439-96-5	Manganese	694		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	4.4			P
7440-02-0	Nickel	50.2			P
7440-09-7	Potassium	763	B		A
7782-49-2	Selenium	0.62	B	W	F
7440-22-4	Silver	9.3			P
7440-23-5	Sodium	185	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	13.5			P
7440-66-6	Zinc	28.0		E	P
	Cyanide	0.71			AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

3702

EPA SAMPLE NO.

61268

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6453

Level (low/med): Date Received: 04/25/91

% Solids: 82.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5130			P
7440-36-0	Antimony	22.0		N	P
7440-38-2	Arsenic	4.9			F
7440-39-3	Barium	40.5	B	E	P
7440-41-7	Beryllium	0.61	B		P
7440-43-9	Cadmium	5.0			P
7440-70-2	Calcium	79000			P
7440-47-3	Chromium	13.7			P
7440-48-4	Cobalt	7.5	B		P
7440-50-8	Copper	16.9			P
7439-89-6	Iron	11500			P
7439-92-1	Lead	17.2			F
7439-95-4	Magnesium	20800			P
7439-96-5	Manganese	360		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	4.5			P
7440-02-0	Nickel	20.6			P
7440-09-7	Potassium	848	B		A
7782-49-2	Selenium	0.48	U		F
7440-22-4	Silver	9.0			P
7440-23-5	Sodium	84.8	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	17.9			P
7440-66-6	Zinc	42.5		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

3702

EPA SAMPLE NO.

61302

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Lab Sample ID: FF 6454

Level (low/med): Date Received: 04/25/91

% Solids: 79.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9170			P
7440-36-0	Antimony	26.4		N	P
7440-38-2	Arsenic	5.4		S	F
7440-39-3	Barium	70.3		E	P
7440-41-7	Beryllium	0.85	B		P
7440-43-9	Cadmium	5.5			P
7440-70-2	Calcium	74900			P
7440-47-3	Chromium	19.2			P
7440-48-4	Cobalt	11.5	B		P
7440-50-8	Copper	22.6			P
7439-89-6	Iron	22900			P
7439-92-1	Lead	19.6			F
7439-95-4	Magnesium	20700			P
7439-96-5	Manganese	543		N	P
7439-97-6	Mercury	0.13	U		CV
7439-98-7	Molybdenum	4.8			P
7440-02-0	Nickel	34.5			P
7440-09-7	Potassium	1020	B		A
7782-49-2	Selenium	0.50	U		F
7440-22-4	Silver	9.7			P
7440-23-5	Sodium	129	B		P
7440-28-0	Thallium	0.50	U	W	F
7440-62-2	Vanadium	25.9			P
7440-66-6	Zinc	57.0		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE_M

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	40766.23	101.9	40000.0	40918.39	102.3	40815.24	102.0	P
Antimony	1000.0	1008.00	100.8	1000.0	994.10	99.4	996.00	99.6	P
Arsenic	30.0	29.67	98.9	30.0	28.46	94.9			F
Barium	1000.0	972.74	97.3	1000.0	960.87	96.1	953.78	95.4	P
Beryllium	500.0	525.67	105.1	500.0	520.49	104.1	519.48	103.9	P
Cadmium	1000.0	1012.32	101.2	1000.0	991.71	99.2	997.33	99.7	P
Calcium	40000.0	41244.22	103.1	40000.0	41059.32	102.6	41306.67	103.3	P
Chromium	4000.0	4118.91	103.0	4000.0	4104.58	102.6	4110.47	102.8	P
Cobalt	2000.0	1911.76	95.6	2000.0	1913.93	95.7	1918.61	95.9	P
Copper	4000.0	3869.51	96.7	4000.0	3859.69	96.5	3840.04	96.0	P
Iron	40000.0	38623.96	96.6	40000.0	38722.90	96.8	38776.84	96.9	P
Lead	25.0	24.87	99.5	25.0	25.28	101.1	26.06	104.2	F
Magnesium	40000.0	41247.22	103.1	40000.0	41200.38	103.0	41153.50	102.9	P
Manganese	1000.0	1057.06	105.7	1000.0	1039.33	103.9	1041.25	104.1	P
Mercury	4.0	4.38	109.5	4.0	4.12	103.0	4.03	100.8	CV
Molybdenum	4000.0	4123.23	103.1	4000.0	4124.76	103.1	4140.26	103.5	P
Nickel	4000.0	3985.63	99.6	4000.0	3934.38	98.4	3947.94	98.7	P
Potassium	2500.0	2583.00	103.3	2500.0	2619.00	104.8	2613.00	104.5	A
Selenium	25.0	26.45	105.8	25.0	23.76	95.0	24.75	99.0	F
Silver	1000.0	982.08	98.2	1000.0	990.96	99.1	992.14	99.2	P
Sodium	40000.0	39809.50	99.5	40000.0	39925.29	99.8	39750.41	99.4	P
Thallium	25.0	24.98	99.9	25.0	24.82	99.3	23.88	95.5	F
Vanadium	1000.0	988.35	98.8	1000.0	990.22	99.0	990.04	99.0	P
Zinc	4000.0	4060.37	101.5	4000.0	4027.75	100.7	4040.20	101.0	P
Cyanide	100.0	102.24	102.2	100.0	101.48	101.5	102.72	102.7	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	40718.27	101.8			P
Antimony				1000.0	1008.00	100.8			P
Arsenic	30.0	28.64	95.5	30.0	28.49	95.0	27.46	91.5	F
Barium				1000.0	953.30	95.3			P
Beryllium				500.0	520.32	104.1			P
Cadmium				1000.0	999.99	100.0			P
Calcium				40000.0	41556.60	103.9			P
Chromium				4000.0	4142.40	103.6			P
Cobalt				2000.0	1928.22	96.4			P
Copper				4000.0	3815.19	95.4			P
Iron				40000.0	38928.87	97.3			P
Lead				25.0	26.26	105.0	25.48	101.9	F
Magnesium				40000.0	41021.80	102.6			P
Manganese				1000.0	1047.56	104.8			P
Mercury									NR
Molybdenum				4000.0	4142.99	103.6			P
Nickel				4000.0	3983.18	99.6			P
Potassium				2500.0	2637.00	105.5			A
Selenium				25.0	23.73	94.9	25.02	100.1	F
Silver				1000.0	995.21	99.5			P
Sodium				40000.0	39248.51	98.1			P
Thallium				25.0	25.24	101.0			F
Vanadium				1000.0	992.31	99.2			P
Zinc				4000.0	4073.97	101.8			P
Cyanide				100.0	101.05	101.0	101.12	101.1	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Initial Calibration Source: NBS_____

Continuing Calibration Source: PLASMACHEM__

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	30.0	28.47	94.9	30.0	27.94	93.1	28.50	95.0	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	26.08	104.3	23.54	94.2	F
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium				25.0	25.77	103.1	24.98	99.9	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide				100.0	102.06	102.1			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Initial Calibration Source: NBS_____

Continuing Calibration Source: PLASMACHEM__

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				30.0	29.17	97.2	27.75	92.5	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	23.38	93.5			F
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic				30.0	28.34	94.5			F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	30.0	28.40	94.7	30.0	30.01	100.0	26.94	89.8	F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

AA CRDL Standard Source: SPEX

ICP CRDL Standard Source: SPEX

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	95.32	79.4	103.44	86.2
Arsenic	10.0	9.81	98.1					
Barium								
Beryllium				10.0	9.98	99.8	10.25	102.5
Cadmium				10.0	10.86	108.6	11.10	111.0
Calcium								
Chromium				20.0	19.15	95.8	22.02	110.1
Cobalt				100.0	97.14	97.1	100.49	100.5
Copper				50.0	48.99	98.0	48.39	96.8
Iron								
Lead	3.0	2.90	96.7					
Magnesium								
Manganese				30.0	29.70	99.0	30.42	101.4
Mercury	0.2	0.11	55.0					
Nickel				80.0	78.64	98.3	80.77	101.0
Potassium								
Selenium	5.0	5.55	111.0					
Silver				20.0	16.62	83.1	17.96	89.8
Sodium								
Thallium	10.0	11.22	112.2					
Vanadium				100.0	96.56	96.6	98.55	98.6
Zinc				40.0	42.52	106.3	44.28	110.7

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3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U	30.0	U	P
Arsenic	2.0	U	2.0	U					2.0	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Calcium	20.0	U	20.0	U	20.0	U	20.0	U	180.4	B	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U	0.2	U	[illegible]		0.2	U	CV
Molybdenum	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P
Potassium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	A
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Silver	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	117.2	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Cyanide	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	AS

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BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U	2.0	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium											NR
Selenium			2.0	U	2.0	U	2.0	U			F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide			2.0	U	2.0	U					AS

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BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium											NR
Beryllium											NR
Cadmium											NR
lcium											NR
romium											NR
obalt											NR
Copper											NR
Iron											NR
Lead			2.0	U							F
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			2.0	U	2.0	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_____ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U	2.0	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No: SDG No.: 61079

ICP ID Number: TJA ICAP 61 ICS Source: SPEX

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	511065	506129.4	101.2	507738	501763.9	100.4
Antimony								
Arsenic								
Barium		500		461.5	92.3		455.2	91.0
Beryllium		500		457.8	91.6		455.9	91.2
Cadmium		1000		982.3	98.2		984.7	98.5
Calcium	500000	500000	496905	488953.2	97.8	495344	491032.3	98.2
Chromium		500		467.6	93.5		469.2	93.8
Cobalt		500		464.2	92.8		465.9	93.2
Copper		500		481.5	96.3		471.1	94.2
Iron	200000	200000	201590	200735.6	100.4	200752	200576.0	100.3
Lead								
Magnesium	500000	500000	471165	467013.8	93.4	467812	464206.2	92.8
Manganese		500		468.1	93.6		469.1	93.8
Mercury								
Nickel		1000		942.4	94.2		940.7	94.1
Potassium								
Selenium								
Silver		1000		906.7	90.7		904.2	90.4
Sodium								
Thallium								
Vanadium		500		517.7	103.5		515.0	103.0
Zinc		1000		948.7	94.9		951.0	95.1

FORM IV - IN

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

61079 S

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix: SOIL Level (low/med):

% Solids for Sample: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	69.7172		22.6083		111.79	42.1	N	P
Arsenic	75-125	11.5244		3.8114		9.03	85.4		F
Barium	75-125	416.6407		34.0421	B	447.16	85.6		P
Beryllium	75-125	10.2473		0.6455	B	11.18	85.9		P
Cadmium	75-125	15.8497		5.3308		11.18	94.1		P
Calcium									NR
Chromium	75-125	47.1655		8.7506		44.72	85.9		P
Cobalt	75-125	97.1588		7.4204	B	111.79	80.3		P
Copper	75-125	61.1139		15.4088		55.89	81.8		P
on									NR
ad	75-125	16.8667		11.9647		4.52	108.5		F
Magnesium									NR
Manganese	75-125	466.3543		390.6048		111.79	67.8	N	P
Mercury	75-125	0.6705		0.1140	U	0.57	117.6		CV
Molybdenum	75-125	191.3954		4.1331		223.58	83.8		P
Nickel	75-125	114.8827		22.4314		111.79	82.7		P
Potassium									NR
Selenium	75-125	1.9644		0.4516	U	2.26	86.9		F
Silver	75-125	17.0383		7.6471		11.18	84.0		P
Sodium									NR
Thallium	75-125	8.4740		0.4516	U	11.29	75.1		F
Vanadium	75-125	109.0818		13.9473		111.79	85.1		P
Zinc	75-125	156.6890		59.1813		111.79	87.2		P
Cyanide	75-125	6.2729		0.3704	B	5.67	104.1		AS

Comments:

FORM V (Part 1) - IN 7/88

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___ | 61079 A |

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Matrix: ____SOIL_____ Level (low/med): _____

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		282.10		101.12		200.0	90.5		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese		4842.39		1747.06		3500.0	88.4		P
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

FORM V (Part 2) - IN 7/88

C/M 5/7/91

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DUPLICATES

EPA SAMPLE NO.

61079 D

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Level (low/med):

% Solids for Sample: 87.7 % Solids for Duplicate: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		4170.0525		4854.8540		15.2		P
Antimony	13.4	22.6083		21.4902		5.1		P
Arsenic	2.3	3.8114		4.1794		9.2		F
Barium		34.0421	B	34.6169	B	1.7		P
Beryllium		0.6455	B	0.6103	B	5.6		P
Cadmium	1.1	5.3308		5.2700		1.1		P
Calcium		129633.8759		108081.1538		18.1		P
Chromium	2.2	8.7506		10.8441		21.4		P
Cobalt		7.4204	B	7.7948	B	4.9		P
Copper	5.6	15.4088		15.3579		0.3		P
Iron		9610.2998		10207.7341		6.0		P
Lead		11.9647		12.5450		4.7		F
Magnesium		24290.9884		23319.2341		4.1		P
Manganese		390.6048		424.3467		8.3		P
Mercury		0.1140	U	0.1140	U			CV
Molybdenum		4.1331		3.9916		3.5		P
Nickel	8.9	22.4314		21.9082		2.4		P
Potassium		692.1993	B	756.1782	B	8.8		A
Selenium		0.4516	U	0.4516	U			F
Silver	2.2	7.6471		8.3028		8.2		P
Sodium		140.4581	B	146.4936	B	4.2		P
Thallium		0.4516	U	0.4516	U			F
Vanadium	11.2	13.9473		15.2227		8.7		P
Zinc		59.1813		72.3170		20.0		P
Cyanide		0.3704	B	0.3524	B	5.0		AS

FORM VI - IN

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LABORATORY CONTROL SAMPLE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

Solid LCS Source: _____

Aqueous LCS Source: SPEX_____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2019.83	101.0						
Antimony	500.0	495.58	99.1						
Arsenic	40.0	37.41	93.5						
Barium	2000.0	1961.28	98.1						
Beryllium	50.0	47.99	96.0						
Cadmium	50.0	48.82	97.6						
Calcium	2000.0	2147.22	107.4						
Chromium	200.0	195.49	97.7						
Cobalt	500.0	473.48	94.7						
Copper	250.0	228.88	91.6						
Iron	1000.0	984.74	98.5						
Lead	20.0	21.64	108.2						
Magnesium	2000.0	2103.21	105.2						
Manganese	500.0	488.53	97.7						
Mercury									
Molybdenum	1000.0	1010.66	101.1						
Nickel	500.0	485.36	97.1						
Potassium	2000.0	2025.00	101.2						
Selenium	10.0	9.70	97.0						
Silver	50.0	44.86	89.7						
Sodium	2000.0	2033.42	101.7						
Thallium	50.0	57.40	114.8						
Vanadium	500.0	482.68	96.5						
Zinc	500.0	475.34	95.1						
Cyanide	100.0	92.59	92.6						

FORM VII - IN

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STANDARD ADDITION RESULTS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.:_____ SDG No.: 61079_

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
61079_D_	AS	17.26	10.00	28.07	15.00	32.16	20.00	36.32	18.5	0.9972	
61150___	AS	14.06	10.00	22.35	15.00	28.60	20.00	32.44	29.5	0.9966	
61220___	AS	11.49	5.00	16.00	10.00	21.44	15.00	24.86	25.5	0.9965	
61246___	AS	18.47	10.00	26.97	15.00	32.61	20.00	35.41	21.3	0.9958	
61254___	AS	12.61	5.00	17.97	10.00	19.69	15.00	23.41	39.0	0.9813	+
61260___	AS	17.35	10.00	25.78	15.00	30.77	20.00	35.15	19.2	0.9995	
61302___	AS	11.68	5.00	15.64	10.00	20.93	15.00	26.93	21.8	0.9959	
61254___	PB	7.029	5.00	12.02	10.00	16.21	15.00	21.60	73.4	0.9990	
61260___	PB	9.010	5.00	13.75	10.00	17.61	15.00	22.03	85.3	0.9993	

FORM VIII - IN 7/88

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ICP SERIAL DILUTION

EPA SAMPLE NO.

61079 L

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

Matrix (soil/water): SOIL Level (low/med):

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	18651.39		19230.00		3.1		P
Antimony	101.12		150.00	U	100.0		P
Arsenic							
Barium	152.26	B	168.55	B	10.7	E	P
Beryllium	2.89	B	10.00	U	100.0		P
Cadmium	23.84		29.48		23.7		P
Calcium	579813.44		589000.00		1.6		P
Chromium	39.14		128.15		227.4		P
Cobalt	33.19	B	50.00	U	100.0		P
Copper	68.92		92.65	B	34.4		P
Iron	42983.99		46860.00		9.0		P
Lead							
Magnesium	108646.30		114450.00		5.3		P
Manganese	1747.06		1916.50		9.7		P
Mercury							
Molybdenum	18.49		50.00	U	100.0		P
Nickel	100.33		121.05	B	20.7		P
Potassium							
Selenium							
Silver	34.20		125.35		266.5		P
Sodium	628.23	B	701.00	B	11.6		P
Thallium							
Vanadium	62.38		102.60	B	64.5		P
Zinc	264.70		302.05		14.1	E	P
Cyanide							

FORM IX - IN

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CM 5/7/91

10

Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: TJA_ICAP_61 Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA1_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	60.0	P
Antimony	206.84		60	30.0	P
Arsenic			10		NR
Barium	493.41		200	2.0	P
Beryllium	313.04		5	2.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		50	10.0	P
Copper	324.75		25	10.0	P
Iron	259.94		100	10.0	P
Lead	283.30	BZ	3	2.0	F
Magnesium	279.08		5000	50.0	P
Manganese	257.61		15	2.0	P
Mercury			0.2		NR
Molybdenum	202.03			10.0	P
Nickel	231.60		40	20.0	P
Potassium			5000		NR
Selenium			5		NR
Silver	328.07		10	10.0	P
Sodium	589.00		5000	100.0	P
Thallium	276.80	BZ	10	2.0	F
Vanadium	292.40		50	10.0	P
Zinc	213.86		20	5.0	P
Cyanide			10		NR

Comments:

CM 5/7/91

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA2_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Molybdenum					NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	2.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: Date: 03/28/91

Flame AA ID Number : TJA_SH_22

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Molybdenum					NR
Nickel			40		NR
Potassium	766.50	BS	5000	100.0	A
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	570.00		10	2.0	AS

Comments:

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Instrument Detection Limits (Quarterly) 3702

b Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: Date: 03/28/91

Flame AA ID Number : BUCK_400

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70	BD	0.2	0.2	CV
Molybdenum					NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

CM 5/7/91

11A
ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667 SAS No.: _____ SDG No.: 61079_

ICP ID Number: TJA ICAP 61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS_
Aluminum	308.22	0.0000000	0.0003700	0.0000000	0.0002000	0.0000000
Antimony	206.84	0.0031000	0.0000000	0.0005600	0.0002400	0.0000000
Arsenic	189.04	0.0020000	0.0001000	0.0008000	0.0003900	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000500	0.0000000	0.0072000
Calcium	317.93	0.0000000	0.0000000	0.0003700	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0001400	0.0001000	0.0001300	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0001000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000900	0.0000000	0.0001000	0.0000000
Lead	220.35	0.0012000	0.0000400	0.0007000	0.0004000	0.0000000
Magnesium	279.08	0.0000000	0.0005400	0.0009000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000500	0.0000500	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0004600	0.0003800	0.0000000
Potassium						
Selenium	196.03	0.0036000	0.0000000	0.0015000	0.0004000	0.0000000
Silver	328.07	0.0000000	0.0001000	0.0000000	0.0000000	0.0000000
Sodium	589.00	0.0003600	0.0002000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0017000	0.0000000	0.0001000	0.0000000
Vanadium	292.40	0.0000000	0.0000600	0.0000000	0.0000000	0.0000000
Zinc	213.86	0.0000000	0.0000000	0.0001800	0.0000000	0.0000000

Comments:

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ICP Interelement Correction Factors (Annually)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : CO	CR	CU	MN	MO
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0019000	0.0078000
Antimony	206.84	0.0000000	0.0076000	0.0000000	0.0003600	0.0071000
Arsenic	189.04	0.0000000	0.0065000	0.0000000	0.0008700	0.0043000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0010000	0.0000000	0.0005500	0.0011000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0004600	0.0006600
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0005500
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0016000	0.0004800
Lead	220.35	0.0020000	0.0000000	0.0015000	0.0009000	0.0028000
Magnesium	279.08	0.0000000	0.0014000	0.0000000	0.0030000	0.0017000
nganese	257.61	0.0020000	0.0000000	0.0000000	0.0000000	0.0000000
rcury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium						
Selenium	196.03	0.0020000	0.0000000	0.0000000	0.0013000	0.0014000
Silver	328.07	0.0000000	0.0000000	0.0000900	0.0001000	0.0000000
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0000000	0.0000000	0.0003000	0.0027000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0001000	0.0011000
Zinc	213.86	0.0000000	0.0000000	0.0046000	0.0000000	0.0000000

Comments:

FORM XI (Part 1) - IN 7/88

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U.S. EPA - CLP

11B
ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : NI	TI	V	ZN	
Aluminum	308.22	0.0001300	0.0027000	0.0238000	0.0000000	
Antimony	206.84	0.0001600	0.0014000	0.0005700	0.0010000	
Arsenic	189.04	0.0001500	0.0008000	0.0009000	0.0000000	
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0055000	0.0000000	
Cadmium	228.80	0.0001400	0.0000000	0.0001000	0.0000000	
Calcium	317.93	0.0000000	0.0006000	0.0008000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0007000	0.0000000	
Cobalt	228.62	0.0007200	0.0013000	0.0000000	0.0000000	
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.94	0.0000000	0.0000000	0.0003300	0.0000000	
Lead	220.35	0.0017500	0.0007000	0.0004200	0.0000000	
Magnesium	279.08	0.0000000	0.0010000	0.0013000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Potassium						
Selenium	196.03	0.0002600	0.0003000	0.0007700	0.0000000	
Silver	328.07	0.0000000	0.0003000	0.0001900	0.0000000	
Sodium	589.00	0.0000000	0.0003000	0.0000000	0.0000000	
Thallium	377.57	0.1137000	0.0022000	0.0071000	0.0000000	
Vanadium	292.40	0.0000000	0.0005000	0.0000000	0.0000000	
Zinc	213.86	0.0032800	0.0000000	0.0001700	0.0000000	

Comments:

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12
ICP Linear Ranges (Quarterly)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36667 SAS No.: SDG No.: 61079

ICP ID Number: TJA ICAP 61 Date: 03/28/91

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	10.00	1000000.0	
Antimony	10.00	10000.0	
Arsenic	10.00	1000000.0	
Barium	10.00	15000.0	
Beryllium	10.00	5000.0	
Cadmium	10.00	10000.0	
Calcium	10.00	700000.0	
Chromium	10.00	50000.0	
Cobalt	10.00	20000.0	
Copper	10.00	50000.0	
Iron	10.00	50000.0	
Lead	10.00	1000000.0	
Magnesium	10.00	350000.0	
Manganese	10.00	10000.0	
Mercury			NR
Molybdenum	10.00	50000.0	
Nickel	10.00	50000.0	
Potassium			NR
Selenium	10.00	100000.0	
Silver	10.00	5000.0	
Sodium	10.00	400000.0	
Thallium	10.00	200000.0	
Vanadium	10.00	10000.0	
Zinc	10.00	50000.0	
Cyanide			

Comments:

FORM XII - IN 7/88

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13
PREPARATION LOG

3702

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36667 SAS No.: _____ SDG No.:61079_

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61079	04/26/91	1.02	200
61079_D	04/26/91	1.01	200
61079_S	04/26/91	1.02	200
61150	04/26/91	1.00	200
61220	04/26/91	1.01	200
61246	04/26/91	1.01	200
61254	04/26/91	1.00	200
61260	04/26/91	1.01	200
61268	04/26/91	1.02	200
61302	04/26/91	1.00	200

FORM XIII - IN 7/88

OMS
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3702

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PREPARATION LOG

.b Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36667 SAS No.: _____ SDG No.:61079_

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61079	04/26/91	1.01	200
61079_D	04/26/91	1.01	200
61079_S	04/26/91	1.01	200
61150	04/26/91	1.01	200
61220	04/26/91	1.01	200
61246	04/26/91	1.00	200
61254	04/26/91	1.00	200
61260	04/26/91	1.01	200
61268	04/26/91	1.00	200
61302	04/26/91	1.01	200

FORM XIII - IN 7/88

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PREPARATION LOG

3702

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36667 SAS No.: _____ SDG No.:61079_

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61079	04/30/91	0.20	100
61079_D	04/30/91	0.20	100
61079_S	04/30/91	0.20	100
61150	04/30/91	0.20	100
61220	04/30/91	0.20	100
61246	04/30/91	0.20	100
61254	04/30/91	0.21	100
61260	04/30/91	0.20	100
61268	04/30/91	0.21	100
61302	04/30/91	0.20	100

FORM XIII - IN 7/88

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PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36667 SAS No.: _____ SDG No.:61079_

Method: AS

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61079	04/26/91	5.01	250
61079_D	04/26/91	5.07	250
61079_S	04/26/91	5.03	250
61150	04/26/91	5.14	250
61220	04/26/91	5.16	250
61246	04/26/91	5.21	250
61254	04/26/91	5.10	250
61260	04/26/91	5.16	250
61268	04/26/91	5.18	250
61302	04/26/91	5.21	250

FORM XIII - IN 7/88

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ANALYSIS RUN LOG

.o Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667_ SAS No.: _____ SDG No.:61079_

Instrument ID Number: TJA ICAP 61 Method: P

Start Date: 04/29/91 End Date: 04/29/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZ	1.00	1106		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1114		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1116		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1119		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1223																									
ZZZZZ	1.00	1230		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1233		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1235		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1238																									
ZZZZZ	1.00	1242		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1245		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1250		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1258		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1305																									
ZZZZZ	1.00	1309		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1312																									
ZZZZZ	1.00	1315		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1318		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1322		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
PBW	1.00	1326		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
LCSW	1.00	1330		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1334		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1337		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1350		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1354																									
ZZZZZ	1.00	1406		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1411		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1415		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1420		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1423		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-

FORM XIV - IN 7/88

CM 5/7/91

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ANALYSIS RUN LOG

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Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36667_ SAS No.: _____ SDG No.:61079_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 04/29/91 End Date: 04/29/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1426		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1429		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1432		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1438		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1441		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1445		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1448		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1452		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1457		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1504																									
ZZZZZ	1.00	1509		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1513		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1517		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZ	1.00	1520																									
ZZZ	1.00	1523		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1526		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1529		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1532																									
ZZZZZ	1.00	1535		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FORM XIV - IN 7/88

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3702

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.:61121_

SOW No.: 788__

EPA Sample No.	Lab Sample ID
_61121_____	__FF_6639_____
_61121_D_____	__FF_6640D____
_61121_S_____	__FF_6641MS___
_61128_____	__FF_6642_____
_61156_____	__FF_6643_____
_61163_____	__FF_6644_____
_61170_____	__FF_6650_____
_61177_____	__FF_6645_____
_61184_____	__FF_6646_____
_61191_____	__FF_6647_____
_61198_____	__FF_6649_____
_61219_____	__FF_6636_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO_
If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Soomi L Chung Name: Soomi L. Chung

Date: 5-15-91 Title: Group Leader

COVER PAGE - IN Rev.6/89

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3702

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61121

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6639

Level (low/med): Date Received: 05/02/91

% Solids: 92.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6910			P
7440-36-0	Antimony	28.3		N	P
7440-38-2	Arsenic	3.6			F
7440-39-3	Barium	52.6			P
7440-41-7	Beryllium	0.86	B		P
7440-43-9	Cadmium	5.6			P
7440-70-2	Calcium	108000			P
7440-47-3	Chromium	13.0		*	P
7440-48-4	Cobalt	8.7	B		P
7440-50-8	Copper	16.2			P
7439-89-6	Iron	13300			P
7439-92-1	Lead	16.5		N*	F
7439-95-4	Magnesium	26800			P
7439-96-5	Manganese	471		*	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	22.8			P
7440-09-7	Potassium	767	B		A
7782-49-2	Selenium	0.43	U	N	F
7440-22-4	Silver	8.0			P
7440-23-5	Sodium	145	B		P
7440-28-0	Thallium	0.43	U	N	F
7440-62-2	Vanadium	18.2			P
7440-66-6	Zinc	32.9			P
7439-98-7	Molybdenum	4.1			P
	Cyanide	0.12	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

7/88

SL 5/14/91

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61128

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF-6642

Level (low/med): Date Received: 05/02/91

% Solids: 89.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4690			P
7440-36-0	Antimony	25.7		N	P
7440-38-2	Arsenic	5.5		S	F
7440-39-3	Barium	44.7	B		P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	5.3			P
7440-70-2	Calcium	123000			P
7440-47-3	Chromium	10.2		•	P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	19.0			P
7439-89-6	Iron	11100			P
7439-92-1	Lead	8.7		N*	F
7439-95-4	Magnesium	23600			P
7439-96-5	Manganese	372		*	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	23.1			P
7440-09-7	Potassium	786	B		A
7782-49-2	Selenium	0.44	U	WN	F
7440-22-4	Silver	7.7			P
7440-23-5	Sodium	145	B		P
7440-28-0	Thallium	0.44	U	N	F
7440-62-2	Vanadium	15.9			P
7440-66-6	Zinc	34.8			P
7439-98-7	Molybdenum	4.8			P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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SW 5/14/91

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61156

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6643

Level (low/med): Date Received: 05/02/91

% Solids: 82.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9520			P
7440-36-0	Antimony	31.3		N	P
7440-38-2	Arsenic	5.4			F
7440-39-3	Barium	80.3			P
7440-41-7	Beryllium	0.93	B		P
7440-43-9	Cadmium	6.1			P
7440-70-2	Calcium	100000			P
7440-47-3	Chromium	18.6		*	P
7440-48-4	Cobalt	12.8			P
7440-50-8	Copper	21.7			P
7439-89-6	Iron	19600			P
7439-92-1	Lead	10.2		N*	F
7439-95-4	Magnesium	26000			P
7439-96-5	Manganese	529		*	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	35.0			P
7440-09-7	Potassium	1100	B		A
7782-49-2	Selenium	0.48	U	N	F
7440-22-4	Silver	9.7			P
7440-23-5	Sodium	122	B		P
7440-28-0	Thallium	0.48	U	N	F
7440-62-2	Vanadium	22.9			P
7440-66-6	Zinc	51.0			P
7439-98-7	Molybdenum	4.4			P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61163

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6644

Level (low/med): Date Received: 05/02/91

% Solids: 83.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10000			P
7440-36-0	Antimony	28.6		N	P
7440-38-2	Arsenic	2.7			F
7440-39-3	Barium	67.3			P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	4.7			P
7440-70-2	Calcium	131000			P
7440-47-3	Chromium	15.8		*	P
7440-48-4	Cobalt	12.4			P
7440-50-8	Copper	20.2			P
7439-89-6	Iron	20400			P
7439-92-1	Lead	6.7		SN*	F
7439-95-4	Magnesium	15400			P
7439-96-5	Manganese	498		*	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	30.0			P
7440-09-7	Potassium	949	B		A
7782-49-2	Selenium	0.48	U	WN	F
7440-22-4	Silver	8.4			P
7440-23-5	Sodium	97.9	B		P
7440-28-0	Thallium	0.48	U	N	F
7440-62-2	Vanadium	24.0			P
7440-66-6	Zinc	45.4			P
7439-98-7	Molybdenum	3.6			P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61170

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6650

Level (low/med): Date Received: 05/02/91

% Solids: 81.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7950			P
7440-36-0	Antimony	15.9		N	P
7440-38-2	Arsenic	6.4			F
7440-39-3	Barium	84.8			P
7440-41-7	Beryllium	0.61	B		P
7440-43-9	Cadmium	2.5			P
7440-70-2	Calcium	11000			P
7440-47-3	Chromium	13.0		*	P
7440-48-4	Cobalt	9.0	B		P
7440-50-8	Copper	15.4			P
7439-89-6	Iron	17000			P
7439-92-1	Lead	15.2		N*	F
7439-95-4	Magnesium	5930			P
7439-96-5	Manganese	609		*	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	22.1			P
7440-09-7	Potassium	994	B		A
7782-49-2	Selenium	0.48	U	WN	F
7440-22-4	Silver	3.8			P
7440-23-5	Sodium	43.8	B		P
7440-28-0	Thallium	0.48	U	N	F
7440-62-2	Vanadium	19.1			P
7440-66-6	Zinc	45.7			P
7439-98-7	Molybdenum	3.0			P
	Cyanide	0.18	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61177

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6645

Level (low/med): Date Received: 05/02/91

% Solids: 79.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8480			P
7440-36-0	Antimony	30.2		N	P
7440-38-2	Arsenic	7.8			F
7440-39-3	Barium	47.7	B		P
7440-41-7	Beryllium	0.89	B		P
7440-43-9	Cadmium	6.7			P
7440-70-2	Calcium	90900			P
7440-47-3	Chromium	18.4		*	P
7440-48-4	Cobalt	13.0			P
7440-50-8	Copper	23.8			P
7439-89-6	Iron	25200			P
7439-92-1	Lead	14.4		N*	F
7439-95-4	Magnesium	28300			P
7439-96-5	Manganese	490		*	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	35.1			P
7440-09-7	Potassium	1030	B		A
7782-49-2	Selenium	0.50	U	WN	F
7440-22-4	Silver	10.1			P
7440-23-5	Sodium	114	B		P
7440-28-0	Thallium	0.50	U	N	F
7440-62-2	Vanadium	24.5			P
7440-66-6	Zinc	56.0			P
7439-98-7	Molybdenum	5.7			P
	Cyanide	0.13	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61184

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF-6646

Level (low/med): Date Received: 05/02/91

% Solids: 86.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8680			P
7440-36-0	Antimony	18.3		N	P
7440-38-2	Arsenic	5.2			F
7440-39-3	Barium	60.5			P
7440-41-7	Beryllium	0.71	B		P
7440-43-9	Cadmium	2.7			P
7440-70-2	Calcium	17500			P
7440-47-3	Chromium	14.2		•	P
7440-48-4	Cobalt	9.7	B		P
7440-50-8	Copper	15.7			P
7439-89-6	Iron	18100			P
7439-92-1	Lead	15.0		N*	F
7439-95-4	Magnesium	6840			P
7439-96-5	Manganese	478		*	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	21.8			P
7440-09-7	Potassium	724	B		A
7782-49-2	Selenium	0.46	U	WN	F
7440-22-4	Silver	4.9			P
7440-23-5	Sodium	50.5	B		P
7440-28-0	Thallium	0.46	U	N	F
7440-62-2	Vanadium	21.2			P
7440-66-6	Zinc	59.4			P
7439-98-7	Molybdenum	3.1			P
	Cyanide	0.17	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

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EPA SAMPLE NO.

61191

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6647

Level (low/med): Date Received: 05/02/91

% Solids: 74.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7500			P
7440-36-0	Antimony	12.9	B	N	P
7440-38-2	Arsenic	3.7			F
7440-39-3	Barium	49.9	B		P
7440-41-7	Beryllium	0.54	U		P
7440-43-9	Cadmium	1.7			P
7440-70-2	Calcium	4880			P
7440-47-3	Chromium	10.5		*	P
7440-48-4	Cobalt	8.1	B		P
7440-50-8	Copper	10.9			P
7439-89-6	Iron	16100			P
7439-92-1	Lead	14.6		N*	F
7439-95-4	Magnesium	3050			P
7439-96-5	Manganese	367		*	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	477	B		A
7782-49-2	Selenium	0.53	U	N	F
7440-22-4	Silver	2.7	U		P
7440-23-5	Sodium	42.0	B		P
7440-28-0	Thallium	0.53	U	N	F
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	34.0			P
7439-98-7	Molybdenum	2.7	U		P
	Cyanide	0.17	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61198

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF 6649

Level (low/med): Date Received: 05/02/91

% Solids: 77.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10000			P
7440-36-0	Antimony	25.0		N	P
7440-38-2	Arsenic	7.3			F
7440-39-3	Barium	78.9			P
7440-41-7	Beryllium	0.90	B		P
7440-43-9	Cadmium	3.1			P
7440-70-2	Calcium	49700			P
7440-47-3	Chromium	18.5		*	P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	18.1			P
7439-89-6	Iron	19500			P
7439-92-1	Lead	18.6		N*	F
7439-95-4	Magnesium	8910			P
7439-96-5	Manganese	774		*	P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	21.1			P
7440-09-7	Potassium	945	B		A
7782-49-2	Selenium	0.51	U	N	F
7440-22-4	Silver	8.9			P
7440-23-5	Sodium	75.9	B		P
7440-28-0	Thallium	0.51	U	N	F
7440-62-2	Vanadium	25.9			P
7440-66-6	Zinc	65.4			P
7439-98-7	Molybdenum	3.8			P
	Cyanide	0.24	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61219

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Lab Sample ID: FF-6636

Level (low/med): Date Received: 05/02/91

% Solids: 87.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4010			P
7440-36-0	Antimony	34.1	U	N	P
7440-38-2	Arsenic	9.1			F
7440-39-3	Barium	55.1	B		P
7440-41-7	Beryllium	2.3	U		P
7440-43-9	Cadmium	6.9			P
7440-70-2	Calcium	177000			P
7440-47-3	Chromium	30.3		*	P
7440-48-4	Cobalt	11.4	U		P
7440-50-8	Copper	29.3			P
7439-89-6	Iron	9380			P
7439-92-1	Lead	81.4		N*	F
7439-95-4	Magnesium	31800			P
7439-96-5	Manganese	489		*	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	30.0	B		P
7440-09-7	Potassium	495	B		A
7782-49-2	Selenium	0.46	U	WN	F
7440-22-4	Silver	31.1			P
7440-23-5	Sodium	166	B		P
7440-28-0	Thallium	0.51	B	WN	F
7440-62-2	Vanadium	24.9	B		P
7440-66-6	Zinc	52.4			P
7439-98-7	Molybdenum	11.4	U		P
	Cyanide	0.14	B		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	40880.00	102.2	40000.0	40605.41	101.5	41219.44	103.0	P
Antimony	1000.0	1003.00	100.3	1000.0	1005.00	100.5	1027.00	102.7	P
Arsenic	30.0	28.98	96.6	30.0	28.66	95.5			F
Barium	1000.0	991.10	99.1	1000.0	975.46	97.5	987.15	98.7	P
Beryllium	500.0	528.70	105.7	500.0	523.64	104.7	537.04	107.4	P
Cadmium	1000.0	969.40	96.9	1000.0	965.67	96.6	985.25	98.5	P
Calcium	40000.0	41130.00	102.8	40000.0	40580.07	101.5	41796.14	104.5	P
Chromium	4000.0	4041.00	101.0	4000.0	3988.68	99.7	4107.65	102.7	P
Cobalt	2000.0	1922.00	96.1	2000.0	1894.91	94.7	1949.08	97.5	P
Copper	4000.0	3931.00	98.3	4000.0	3873.32	96.8	3936.00	98.4	P
Iron	40000.0	38240.00	95.6	40000.0	37711.92	94.3	38771.97	96.9	P
Lead	25.0	25.38	101.5	25.0	25.08	100.3	25.56	102.2	F
Magnesium	40000.0	40680.00	101.7	40000.0	40316.91	100.8	40808.62	102.0	P
Manganese	1000.0	1028.00	102.8	1000.0	1014.66	101.5	1040.96	104.1	P
Mercury	4.0	4.04	101.0	4.0	3.97	99.2	3.97	99.2	CV
Nickel	4000.0	3854.00	96.4	4000.0	3810.00	95.2	3909.34	97.7	P
Potassium	2500.0	2519.00	100.8	2500.0	2432.00	97.3	2517.00	100.7	A
Selenium	25.0	27.31	109.2	25.0	26.33	105.3	23.27	93.1	F
Silver	1000.0	970.30	97.0	1000.0	960.34	96.0	981.91	98.2	P
Sodium	40000.0	41090.00	102.7	40000.0	40932.46	102.3	41073.91	102.7	P
Thallium	25.0	25.20	100.8	25.0	25.41	101.6	26.23	104.9	F
Vanadium	1000.0	983.10	98.3	1000.0	972.28	97.2	999.23	99.9	P
Zinc	4000.0	3909.00	97.7	4000.0	3880.76	97.0	3978.98	99.5	P
Molybdenum	4000.0	4083.00	102.1	4000.0	4027.60	100.7	4147.25	103.7	P
Cyanide	100.0	98.47	98.5	100.0	97.96	98.0	97.66	97.7	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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3702

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	40702.90	101.8	39844.62	99.6	P
Antimony				1000.0	1031.00	103.1	1011.00	101.1	P
Arsenic	30.0	30.54	101.8	30.0	31.07	103.6	29.98	99.9	F
Barium				1000.0	983.56	98.4	962.74	96.3	P
Beryllium				500.0	536.14	107.2	528.76	105.8	P
Cadmium				1000.0	974.59	97.5	964.53	96.5	P
Calcium				40000.0	41170.72	102.9	40661.41	101.7	P
Chromium				4000.0	4063.06	101.6	4011.34	100.3	P
·balt				2000.0	1923.62	96.2	1894.78	94.7	P
pper				4000.0	3899.70	97.5	3804.94	95.1	P
ıron				40000.0	38307.87	95.8	37661.96	94.2	P
Lead				25.0	24.71	98.8	23.04	92.2	F
Magnesium				40000.0	40354.28	100.9	39604.85	99.0	P
Manganese				1000.0	1028.55	102.9	1012.91	101.3	P
Mercury									NR
Nickel				4000.0	3867.85	96.7	3806.04	95.2	P
Potassium				2500.0	2550.00	102.0			A
Selenium				25.0	26.48	105.9	26.82	107.3	F
Silver				1000.0	966.87	96.7	952.79	95.3	P
Sodium				40000.0	40882.60	102.2	40064.26	100.2	P
Thallium				25.0	26.12	104.5	24.38	97.5	F
Vanadium				1000.0	986.49	98.6	968.89	96.9	P
Zinc				4000.0	3941.53	98.5	3923.10	98.1	P
Molybdenum				4000.0	4097.34	102.4	4023.27	100.6	P
Cyanide				100.0	97.66	97.7			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	30.0	28.54	95.1	30.0	29.41	98.0			F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	22.46	89.8			F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium	25.0	26.82	107.3	25.0	25.89	103.6	26.19	104.8	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88
5/14/91

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	25.0	22.55	90.2	25.0	22.94	91.8	26.73	106.9	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

SK 5/14/91

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	25.0	26.73	106.9	25.0	26.09	104.4	26.73	106.9	F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

SL 5/14/91

U.S. EPA - CLP

3702

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Initial Calibration Source: NBS_____

Continuing Calibration Source: NBS_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead				25.0	25.38	101.5			F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

5/14/91

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

AA CRDL Standard Source: SPEX_____

ICP CRDL Standard Source: SPEX_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	90.35	75.3	109.30	91.1
Arsenic	10.0	10.91	109.1					
Barium								
Beryllium				10.0	10.07	100.7	10.64	106.4
Cadmium				10.0	9.97	99.7	10.96	109.6
Calcium								
Chromium				20.0	16.74	83.7	23.12	115.6
Cobalt				100.0	95.16	95.2	101.80	101.8
Copper				50.0	51.45	102.9	49.96	99.9
Iron								
Lead	3.0	3.20	106.7					
Magnesium								
Manganese				30.0	28.33	94.4	29.54	98.5
Mercury	0.2	0.15	75.0					
Nickel				80.0	74.77	93.5	83.64	104.6
Potassium								
Selenium	5.0	5.07	101.4					
Silver				20.0	14.39	72.0	19.47	97.4
Sodium								
Thallium	10.0	11.96	119.6					
Vanadium				100.0	93.72	93.7	98.87	98.9
Zinc				40.0	39.96	99.9	43.91	109.8

FORM II (PART 2) - IN

7/88
8/14/91

U.S. EPA - CLP

3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	5/7/91 ICP, CN, Hg, K 5/8/91 GFAA Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U	30.0	U	P
Arsenic	2.0	U	2.0	U					2.0	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
lcium	20.0	U	20.0	U	20.0	U	20.0	U	41.8	B	P
:omium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.2	U	CV
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P
Potassium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	A
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Silver	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Molybdenum	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cyanide	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	AS

FORM III - IN

7/88

5/14/91

U.S. EPA - CLP

3702

3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	5/6/91 CN 5/15/91 Prepa-ration Blank	C	M
Aluminum			60.0	U							P
Antimony			30.0	U							P
Arsenic											NR
Barium			2.0	U							P
Beryllium			2.0	U							P
Cadmium			2.0	U							P
Calcium			47.4	B							P
Chromium			10.0	U							P
Cobalt			10.0	U							P
Copper			10.0	U							P
Iron			12.5	B							P
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium			50.0	U							P
Manganese			2.0	U							P
Mercury											NR
Nickel			20.0	U							P
Potassium											NR
Selenium			-2.6	B							F
Silver			10.0	U							P
Sodium			100.0	U							P
Thallium			2.0	U							F
Vanadium			10.0	U							P
Zinc			5.0	U							P
Molybdenum			10.0	U							P
Cyanide									2.0	U	AS

FORM III - IN

7/88
5/14/91

U.S. EPA - CLP

3
BLANKS

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	2.0	U	2.0	U	2.0	U					F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Molybdenum											NR
Cyanide											NR

FORM III - IN

7/88

SW 5/14/94

U.S. EPA - CLP

3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	2.0	U	2.0	U	2.0	U	2.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Molybdenum											NR
Cyanide											NR

FORM III - IN

7/88
SW 5/14/91

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No: SDG No.: 61121

ICP ID Number: TJA ICAP 61 ICS Source: PEPURE

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	511647	507014.5	101.4	498572	499702.6	99.9
Antimony								
Arsenic								
Barium		500		461.5	92.3		455.4	91.1
Beryllium		500		455.0	91.0		461.3	92.3
Cadmium		1000		951.7	95.2		961.7	96.2
Calcium	500000	500000	490485	484351.8	96.9	487926	487173.9	97.4
Chromium		500		450.9	90.2		458.9	91.8
Cobalt		500		462.6	92.5		465.3	93.1
Copper		500		487.8	97.6		477.1	95.4
Iron	200000	200000	191677	190162.5	95.1	190317	190529.3	95.3
Lead								
Magnesium	500000	500000	466538	463120.0	92.6	456549	456895.0	91.4
Manganese		500		455.8	91.2		456.5	91.3
Mercury								
Nickel		1000		917.6	91.8		927.5	92.8
Potassium								
Selenium								
Silver		1000		894.6	89.5		894.3	89.4
Sodium								
Thallium								
Vanadium		500		511.2	102.2		513.8	102.8
Zinc		1000		911.5	91.2		926.3	92.6

FORM IV - IN

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U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

61121 S

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix: SOIL Level (low/med):

% Solids for Sample: 92.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	44.3256		28.2939		107.15	15.0	N	P
Arsenic	75-125	11.6299		3.5682		8.66	93.1		F
Barium	75-125	403.2819		52.6069		428.61	81.8		P
Beryllium	75-125	9.9696		0.8606	B	10.72	85.0		P
Cadmium	75-125	14.8382		5.5708		10.72	86.4		P
Calcium									NR
Chromium	75-125	45.8045		13.0444		42.86	76.4		P
Cobalt	75-125	92.0494		8.6857	B	107.15	77.8		P
Copper	75-125	57.7999		16.2303		53.58	77.6		P
Iron									NR
Lead	75-125	17.5541		16.4995		4.33	24.4	N	F
Magnesium									NR
Manganese		668.9201		470.5955		107.15	185.1		P
Mercury	75-125	0.5671		0.1031	U	0.54	105.0		CV
Nickel	75-125	106.4712		22.8437		107.15	78.0		P
Potassium									NR
Selenium	75-125	1.5931		0.4286	U	2.16	73.8	N	F
Silver	75-125	16.0748		8.0398		10.72	75.0		P
Sodium									NR
Thallium	75-125	7.8506		0.4286	U	10.82	72.6	N	F
Vanadium	75-125	101.9476		18.2403		107.15	78.1		P
Zinc	75-125	116.4412		32.9312		107.15	77.9		P
Molybdenum	75-125	173.5303		4.1238		214.31	79.0		P
Cyanide	75-125	4.9957		0.1154	B	5.41	90.2		AS

Comments:
SAMPLE_#_FOR_CYANIDE_IS_FF_6640MS

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

66121 A

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Matrix: SOIL Level (low/med): _____

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		508.62		130.72		380.0	99.4		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead		95.50		76.99		20.0	92.6		F
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium		9.41		2.00	U	10.0	94.1		F
Silver									NR
Sodium									NR
Thallium		19.31		2.00	U	20.0	96.6		F
Vanadium									NR
Zinc									NR
Molybdenum									NR
Cyanide									NR

Comments:

FORM V (Part 2) - IN

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SU
5/14/91

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

61121 D

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Matrix (soil/water): SOIL Level (low/med):

% Solids for Sample: 92.4 % Solids for Duplicate: 92.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		6907.2905		8228.1351		17.5		P
Antimony	13.0	28.2939		29.0771		2.7		P
Arsenic	2.1	3.5682		3.3432		6.5		F
Barium	43.3	52.6069		71.6297		30.6		P
Beryllium		0.8606	B	1.1212		26.3		P
Cadmium		5.5708		5.7026		2.3		P
Calcium		107996.9290		96991.0985		10.7		P
Chromium		13.0444		16.1361		21.2	*	P
Cobalt		8.6857	B	8.7082	B	0.3		P
Copper	5.4	16.2303		15.5156		4.5		P
Iron		13258.7528		13752.8351		3.7		P
Lead		16.4995		10.0510		48.6	*	F
Magnesium		26788.1340		26024.3184		2.9		P
Manganese		470.5955		750.6227		45.9	*	P
Mercury		0.1031	U	0.1082	U			CV
Nickel	8.7	22.8437		23.0604		0.9		P
Potassium		767.3160	B	915.5844	B	17.6		A
Selenium		0.4286	U	0.4972	B	200.0		F
Silver	2.2	8.0398		8.5035		5.6		P
Sodium		145.2264	B	174.4379	B	18.3		P
Thallium		0.4286	U	0.4286	U			F
Vanadium	10.8	18.2403		19.4883		6.6		P
Zinc		32.9312		33.2539		1.0		P
Molybdenum		4.1238		4.1123		0.3		P
Cyanide		0.1154	B	0.1187	B	2.8		AS

FORM VI - IN

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SLL
5/14/91

U.S. EPA - CLP

3702

7

LABORATORY CONTROL SAMPLE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Solid LCS Source: _____

Aqueous LCS Source: SPEX_____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2004.84	100.2						
Antimony	500.0	494.35	98.9						
Arsenic	40.0	42.94	107.4						
Barium	2000.0	1945.68	97.3						
Beryllium	50.0	47.01	94.0						
Cadmium	50.0	46.54	93.1						
Calcium	2000.0	2023.24	101.2						
Chromium	200.0	187.11	93.6						
Cobalt	500.0	465.99	93.2						
Copper	250.0	231.59	92.6						
Iron	1000.0	953.79	95.4						
Lead	20.0	21.82	109.1						
Magnesium	2000.0	2030.39	101.5						
Manganese	500.0	469.73	93.9						
Mercury									
Nickel	500.0	465.70	93.1						
Potassium	2000.0	1965.00	98.2						
Selenium	10.0	9.95	99.5			L			
Silver	50.0	44.70	89.4						
Sodium	2000.0	2031.50	101.6						
Thallium	50.0	46.15	92.3						
Vanadium	500.0	471.49	94.3						
Zinc	500.0	454.10	90.8						
Molybdenum	1000.0	971.16	97.1						
Cyanide	100.0	96.74	96.7	← 5/6/91	dec 5/15/91				

FORM VII - IN

7/88

5/14/91

U.S. EPA - CLP

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LABORATORY CONTROL SAMPLE

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

Solid LCS Source: _____

Aqueous LCS Source: SPEX_____

Analyte	Aqueous (ug/L) True	Found 5/9/91	%R 5/15/91	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Molybdenum									
Cyanide	100.0	97.57	97.6						

FORM VII - IN

7/88

5/14/91

U.S. EPA - CLP

8

STANDARD ADDITION RESULTS

3702

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
61128	AS	18.69	10.00	26.76	15.00	31.02	20.00	33.69	24.8	0.9971	
61163	PB	9.859	5.00	15.25	10.00	20.89	15.00	25.84	27.8	0.9997	

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ICP SERIAL DILUTION

3702

EPA SAMPLE NO.

66121 L

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: _____ SDG No.: 61121

Matrix (soil/water): SOIL Level (low/med): _____

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	31911.68		32429.22		1.6		P
Antimony	130.72		150.94	B	15.5		P
Arsenic							
Barium	243.04		261.50	B	7.6		P
Beryllium	3.98	B	10.00	U	100.0		P
Cadmium	25.74		31.18		21.1		P
Calcium	498945.81		505536.64		1.3		P
Chromium	60.26		132.16		119.3		P
Cobalt	40.13	B	50.00	U	100.0		P
Copper	74.98		94.80	B	26.4		P
Iron	61255.44		57905.86		5.5		P
Lead							
Magnesium	123761.18		129655.54		4.8		P
Manganese	2174.15		2348.99		8.0		P
Mercury							
Nickel	105.54		138.30	B	31.0		P
Potassium							
Selenium							
Silver	37.14		111.04		199.0		P
Sodium	670.95	B	734.24	B	9.4		P
Thallium							
Vanadium	84.27		117.34	B	39.2		P
Zinc	152.14		166.99		9.8		P
Molybdenum	19.05		50.00	U	100.0		P
Cyanide							

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

ICP ID Number: TJA_ICAP_61 Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA1_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	60.0	P
Antimony	206.84		60	30.0	P
Arsenic			10		NR
Barium	493.41		200	2.0	P
Beryllium	313.04		5	2.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		50	10.0	P
Copper	324.75		25	10.0	P
Iron	259.94		100	10.0	P
Lead	283.30	BZ	3	2.0	F
Magnesium	279.08		5000	50.0	P
Manganese	257.61		15	2.0	P
Mercury			0.2		NR
Nickel	231.60		40	20.0	P
Potassium			5000		NR
Selenium			5		NR
Silver	328.07		10	10.0	P
Sodium	589.00		5000	100.0	P
Thallium			10		NR
Vanadium	292.40		50	10.0	P
Zinc	213.86		20	5.0	P
Molybdenum	202.03			10.0	P
Cyanide			10		NR

Comments:

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA2_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	2.0	F
Silver			10		NR
Sodium			5000		NR
Thallium	276.80	BZ	10	2.0	F
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide			10		NR

Comments:

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Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

ICP ID Number: Date: 03/28/91

Flame AA ID Number : TJA_SH_22

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium	766.50	BS	5000	100.0	A
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide	570.00		10	2.0	AS

Comments:

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Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

ICP ID Number: Date: 03/28/91

Flame AA ID Number : BUCK_400

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70	BD	0.2	0.2	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Molybdenum					NR
Cyanide			10		NR

Comments:

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11A

ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

ICP ID Number: TJA ICAP 61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS_
Aluminum	308.22	0.0000000	0.0003700	0.0000000	0.0002000	0.0000000
Antimony	206.84	0.0031000	0.0000000	0.0005600	0.0002400	0.0000000
Arsenic	189.04	0.0020000	0.0001000	0.0008000	0.0003900	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000500	0.0000000	0.0072000
Calcium	317.93	0.0000000	0.0000000	0.0003700	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0001400	0.0001000	0.0001300	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0001000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000900	0.0000000	0.0001000	0.0000000
Lead	220.35	0.0012000	0.0000400	0.0007000	0.0004000	0.0000000
Magnesium	279.08	0.0000000	0.0005400	0.0009000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000500	0.0000500	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0004600	0.0003800	0.0000000
Potassium						
Selenium	196.03	0.0036000	0.0000000	0.0015000	0.0004000	0.0000000
Silver	328.07	0.0000000	0.0001000	0.0000000	0.0000000	0.0000000
Sodium	589.00	0.0003600	0.0002000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0017000	0.0000000	0.0001000	0.0000000
Vanadium	292.40	0.0000000	0.0000600	0.0000000	0.0000000	0.0000000
Zinc	213.86	0.0000000	0.0000000	0.0001800	0.0000000	0.0000000

Comments:

FORM XI (Part 1) - IN

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11B
ICP Interelement Correction Factors (Annually)

L Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

ICP ID Number: TJA ICAP 61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : CO_	CR_	CU_	MN_	MO_
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0019000	0.0078000
Antimony	206.84	0.0000000	0.0076000	0.0000000	0.0003600	0.0071000
Arsenic	189.04	0.0000000	0.0065000	0.0000000	0.0008700	0.0043000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0010000	0.0000000	0.0005500	0.0011000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0004600	0.0006600
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0005500
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0016000	0.0004800
Lead	220.35	0.0020000	0.0000000	0.0015000	0.0009000	0.0028000
Magnesium	279.08	0.0000000	0.0014000	0.0000000	0.0030000	0.0017000
ganese	257.61	0.0020000	0.0000000	0.0000000	0.0000000	0.0000000
cury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium						
Selenium	196.03	0.0020000	0.0000000	0.0000000	0.0013000	0.0014000
Silver	328.07	0.0000000	0.0000000	0.0000900	0.0001000	0.0000000
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0000000	0.0000000	0.0003000	0.0027000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0001000	0.0011000
Zinc	213.86	0.0000000	0.0000000	0.0046000	0.0000000	0.0000000

Comments:

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11B
ICP Interelement Correction Factors (Annually)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36678 SAS No.: SDG No.: 61121

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : NI	TI	V	ZN	
Aluminum	308.22	0.0001300	0.0027000	0.0238000	0.0000000	
Antimony	206.84	0.0001600	0.0014000	0.0005700	0.0010000	
Arsenic	189.04	0.0001500	0.0008000	0.0009000	0.0000000	
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0055000	0.0000000	
Cadmium	228.80	0.0001400	0.0000000	0.0001000	0.0000000	
Calcium	317.93	0.0000000	0.0006000	0.0008000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0007000	0.0000000	
Cobalt	228.62	0.0007200	0.0013000	0.0000000	0.0000000	
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.94	0.0000000	0.0000000	0.0003300	0.0000000	
Lead	220.35	0.0017500	0.0007000	0.0004200	0.0000000	
Magnesium	279.08	0.0000000	0.0010000	0.0013000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Potassium						
Selenium	196.03	0.0002600	0.0003000	0.0007700	0.0000000	
Silver	328.07	0.0000000	0.0003000	0.0001900	0.0000000	
Sodium	589.00	0.0000000	0.0003000	0.0000000	0.0000000	
Thallium	377.57	0.1137000	0.0022000	0.0071000	0.0000000	
Vanadium	292.40	0.0000000	0.0005000	0.0000000	0.0000000	
Zinc	213.86	0.0032800	0.0000000	0.0001700	0.0000000	

Comments:

FORM XI (Part 1) - IN 7/88

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ICP Linear Ranges (Quarterly)

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678 SAS No.: _____ SDG No.: 61121_

ICP ID Number: TJA ICAP 61_ Date: 03/28/91

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	10.00	1000000.0	
Antimony	10.00	10000.0	
Arsenic	10.00	1000000.0	
Barium	10.00	15000.0	
Beryllium	10.00	5000.0	
Cadmium	10.00	10000.0	
Calcium	10.00	700000.0	
Chromium	10.00	50000.0	
Cobalt	10.00	20000.0	
Copper	10.00	50000.0	
Iron	10.00	50000.0	
Lead	10.00	1000000.0	
Magnesium	10.00	350000.0	
Manganese	10.00	10000.0	
Mercury			NR
Nickel	10.00	50000.0	
Potassium			NR
Selenium	10.00	100000.0	
Silver	10.00	5000.0	
Sodium	10.00	400000.0	
Thallium	10.00	200000.0	
Vanadium	10.00	10000.0	
Zinc	10.00	50000.0	
Molybdenum	10.00	50000.0	
Cyanide			

Comments:

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PREPARATION LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36678 SAS No.: _____ SDG No.:61121_

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61121	05/07/91	1.00	200
61121_D	05/07/91	1.00	200
61121_S	05/07/91	1.01	200
61128	05/07/91	1.00	200
61156	05/07/91	1.00	200
61163	05/07/91	1.00	200
61170	05/07/91	1.00	200
61177	05/07/91	1.00	200
61184	05/07/91	1.02	200
61191	05/07/91	1.00	200
61198	05/07/91	1.02	200
61219	05/07/91	1.00	200

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PREPARATION LOG

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Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36678 SAS No.: _____ SDG No.:61121_

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61121	05/08/91	1.01	200
61121_D	05/08/91	1.01	200
61121_S	05/08/91	1.00	200
61128	05/08/91	1.01	200
61156	05/08/91	1.01	200
61163	05/08/91	1.00	200
61170	05/08/91	1.01	200
61177	05/08/91	1.01	200
61184	05/08/91	1.00	200
61191	05/08/91	1.01	200
61198	05/08/91	1.01	200
61219	05/08/91	1.00	200

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PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36678 SAS No.: _____ SDG No.:61121_

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61121	05/07/91	0.21	100
61121_D	05/07/91	0.20	100
61121_S	05/07/91	0.20	100
61128	05/07/91	0.21	100
61156	05/07/91	0.20	100
61163	05/07/91	0.21	100
61170	05/07/91	0.20	100
61177	05/07/91	0.21	100
61184	05/07/91	0.20	100
61191	05/07/91	0.21	100
61198	05/07/91	0.22	100
61219	05/07/91	0.22	100

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PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36678 SAS No.: _____ SDG No.:61121_

Method: AS

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61121	05/06/91	4.99	250
61121_D	05/06/91	5.00	250
61121_S	05/06/91	5.00	250
61128	05/06/91	4.98	250
61156	05/06/91	5.00	250
61163	05/06/91	5.01	250
61170	05/07/91	5.01	250
61177	05/07/91	5.00	250
61184	05/07/91	5.01	250
61191	05/07/91	4.99	250
61198	05/07/91	5.02	250
61219	05/07/91	4.99	250

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ANALYSIS RUN LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678_ SAS No.: _____ SDG No.:61121_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 05/08/91 End Date: 05/09/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZ	1.00	1104		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZ	1.00	1206		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICV	1.00	1226		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1229																-		-							-
ZZZZZ	1.00	1231		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ICB	1.00	1236		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSA	1.00	1239		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSAB	1.00	1243		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CRI	1.00	1248		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1252																-		-							-
CCV	1.00	1256		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1300																-		-							-
ZZZ	1.00	1303		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	1.00	1306		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
PBW	1.00	1312		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
LCSW	1.00	1315		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1319																-		-							-
61219	1.00	1324		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61121	1.00	1329		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
66121	1.00	1335		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61121	1.00	1342		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61121	1.00	1346		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1350																-		-							-
61128	1.00	1356		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCV	1.00	1403		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1407																-		-							-
ZZZZZ	1.00	1409		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1413		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
66121	1.00	1419		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61156	1.00	1423		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61163	1.00	1427		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-

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ANALYSIS RUN LOG

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36678_ SAS No.: _____ SDG No.:61121_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 05/08/91 End Date: 05/09/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
61177	1.00	1431		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
61184	1.00	1434		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
61191	1.00	1438		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1442																									
ZZZZZ	1.00	1445																									
CRI	1.00	1449		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1452																									
CCV	1.00	1456		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1459																									
ZZZZZ	1.00	1501																									
CCB	1.00	1504		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
61198	1.00	1507		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
[illegible]70	1.00	1511		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
[illegible]ZZ	1.00	1515																									
[illegible]SA	1.00	1518		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ICSAB	1.00	1522		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1525																									
ZZZZZ	1.00	1529																									
CCV	1.00	1533		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ZZZZZ	1.00	1536																									
ZZZZZ	1.00	1539																									
CCB	1.00	1543		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	
ICV	1.00	1043		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.:61093_

SOW No.: 788__

EPA Sample No.	Lab Sample ID
_61093_____	__FF_6514_____
_61100_____	__FF_6515_____
_61107_____	__FF_6516_____
_61114_____	__FF_6517_____
_61135_____	__FF_6518_____
_61142_____	__FF_6519_____
_61205_____	__FF_6520_____
_61212_____	__FF_6521_____
_61233_____	__FF_6522_____
_61240_____	__FF_6523_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No NO_

If yes - were raw data generated before application of background corrections ? Yes/No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Soomi L Chung Name: Soomi L. Chung

Date: 5-13-91 Title: Group Leader

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61093

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6514

Level (low/med): Date Received: 04/30/91

% Solids: 89.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700			P
7440-36-0	Antimony	25.5		N	P
7440-38-2	Arsenic	5.3			F
7440-39-3	Barium	92.3		E	P
7440-41-7	Beryllium	0.79	B		P
7440-43-9	Cadmium	3.2			P
7440-70-2	Calcium	21000			P
7440-47-3	Chromium	18.8			P
7440-48-4	Cobalt	17.0			P
7440-50-8	Copper	17.8			P
7439-89-6	Iron	23800			P
7439-92-1	Lead	12.6			F
7439-95-4	Magnesium	6370			P
7439-96-5	Manganese	759		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	23.1			P
7440-09-7	Potassium	797	B		A
7782-49-2	Selenium	0.45	U		F
7440-22-4	Silver	5.8			P
7440-23-5	Sodium	54.6	B		P
7440-28-0	Thallium	0.45	U		F
7440-62-2	Vanadium	26.9			P
7440-66-6	Zinc	47.8		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61100

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6515

Level (low/med): Date Received: 04/30/91

% Solids: 79.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10900			P
7440-36-0	Antimony	29.7		N	P
7440-38-2	Arsenic	9.5		S	F
7440-39-3	Barium	113		E	P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	4.9			P
7440-70-2	Calcium	23300			P
7440-47-3	Chromium	22.6			P
7440-48-4	Cobalt	14.8			P
7440-50-8	Copper	23.5			P
7439-89-6	Iron	26300			P
7439-92-1	Lead	10.8			F
7439-95-4	Magnesium	14400			P
7439-96-5	Manganese	1130		N	P
7439-97-6	Mercury	0.13	U		CV
7439-98-7	Molybdenum	4.7			P
7440-02-0	Nickel	38.9			P
7440-09-7	Potassium	1430			A
7782-49-2	Selenium	0.50	U	W	F
7440-22-4	Silver	6.6			P
7440-23-5	Sodium	119	B		P
7440-28-0	Thallium	0.50	U		F
7440-62-2	Vanadium	27.7			P
7440-66-6	Zinc	65.2		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61107

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6516

Level (low/med): Date Received: 04/30/91

% Solids: 80.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13500			P
7440-36-0	Antimony	32.8		N	P
7440-38-2	Arsenic	10.5			F
7440-39-3	Barium	123		E	P
7440-41-7	Beryllium	0.97	B		P
7440-43-9	Cadmium	4.7			P
7440-70-2	Calcium	41600			P
7440-47-3	Chromium	24.5			P
7440-48-4	Cobalt	15.7			P
7440-50-8	Copper	25.9			P
7439-89-6	Iron	27800			P
7439-92-1	Lead	16.5			F
7439-95-4	Magnesium	13700			P
7439-96-5	Manganese	841		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	4.8			P
7440-02-0	Nickel	38.5			P
7440-09-7	Potassium	1300			A
7782-49-2	Selenium	0.50	U		F
7440-22-4	Silver	8.7			P
7440-23-5	Sodium	108	B		P
7440-28-0	Thallium	0.50	U		F
7440-62-2	Vanadium	33.0			P
7440-66-6	Zinc	64.6		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61114

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6517

Level (low/med): Date Received: 04/30/91

% Solids: 89.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5340			P
7440-36-0	Antimony	28.3		N	P
7440-38-2	Arsenic	5.4			F
7440-39-3	Barium	47.9		E	P
7440-41-7	Beryllium	0.64	B		P
7440-43-9	Cadmium	5.6			P
7440-70-2	Calcium	85300			P
7440-47-3	Chromium	14.9			P
7440-48-4	Cobalt	9.4	B		P
7440-50-8	Copper	17.4			P
7439-89-6	Iron	13500			P
7439-92-1	Lead	8.0			F
7439-95-4	Magnesium	24200			P
7439-96-5	Manganese	391		N	P
7439-97-6	Mercury	0.11	U		CV
7439-98-7	Molybdenum	4.6			P
7440-02-0	Nickel	25.1			P
7440-09-7	Potassium	674	B		A
7782-49-2	Selenium	0.44	U		F
7440-22-4	Silver	9.2			P
7440-23-5	Sodium	111	B		P
7440-28-0	Thallium	0.44	U		F
7440-62-2	Vanadium	18.1			P
7440-66-6	Zinc	37.9		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61135

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6518

Level (low/med): Date Received: 04/30/91

% Solids: 80.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9980			P
7440-36-0	Antimony	29.8		N	P
7440-38-2	Arsenic	9.0			F
7440-39-3	Barium	74.4		E	P
7440-41-7	Beryllium	0.88	B		P
7440-43-9	Cadmium	4.9			P
7440-70-2	Calcium	68600			P
7440-47-3	Chromium	19.4			P
7440-48-4	Cobalt	11.3	B		P
7440-50-8	Copper	19.2			P
7439-89-6	Iron	18100			P
7439-92-1	Lead	16.6			F
7439-95-4	Magnesium	18000			P
7439-96-5	Manganese	526		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	4.3			P
7440-02-0	Nickel	26.6			P
7440-09-7	Potassium	988	B		A
7782-49-2	Selenium	0.49	U		F
7440-22-4	Silver	9.7			P
7440-23-5	Sodium	99.2	B		P
7440-28-0	Thallium	0.51	B		F
7440-62-2	Vanadium	25.0			P
7440-66-6	Zinc	47.4		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61142

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: _____ SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6519

Level (low/med): _____ Date Received: 04/30/91

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7450			P
7440-36-0	Antimony	32.3		N	P
7440-38-2	Arsenic	5.7			F
7440-39-3	Barium	49.5		E	P
7440-41-7	Beryllium	0.74	B		P
7440-43-9	Cadmium	6.2			P
7440-70-2	Calcium	87200			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	10.5	B		P
7440-50-8	Copper	20.5			P
7439-89-6	Iron	17200			P
7439-92-1	Lead	10.5			F
7439-95-4	Magnesium	25100			P
7439-96-5	Manganese	478		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	31.3			P
7440-09-7	Potassium	1010	B		A
7782-49-2	Selenium	0.46	U	W	F
7440-22-4	Silver	9.7			P
7440-23-5	Sodium	107	B		P
7440-28-0	Thallium	0.46	U		F
7440-62-2	Vanadium	24.5			P
7440-66-6	Zinc	47.6		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61205

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6520

Level (low/med): Date Received: 04/30/91

% Solids: 70.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10400			P
7440-36-0	Antimony	30.1		N	P
7440-38-2	Arsenic	8.3			F
7440-39-3	Barium	84.4		E	P
7440-41-7	Beryllium	0.82	B		P
7440-43-9	Cadmium	4.9			P
7440-70-2	Calcium	42700			P
7440-47-3	Chromium	21.6			P
7440-48-4	Cobalt	13.2	B		P
7440-50-8	Copper	21.5			P
7439-89-6	Iron	23100			P
7439-92-1	Lead	20.7		S	F
7439-95-4	Magnesium	15700			P
7439-96-5	Manganese	602		N	P
7439-97-6	Mercury	0.14	U		CV
7439-98-7	Molybdenum	4.4			P
7440-02-0	Nickel	31.6			P
7440-09-7	Potassium	1030	B		A
7782-49-2	Selenium	0.56	U		F
7440-22-4	Silver	9.3			P
7440-23-5	Sodium	77.4	B		P
7440-28-0	Thallium	0.56	U		F
7440-62-2	Vanadium	29.4			P
7440-66-6	Zinc	57.5		E	P
	Cyanide	0.14	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61212

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6521

Level (low/med): Date Received: 04/30/91

% Solids: 83.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12900			P
7440-36-0	Antimony	26.3		N	P
7440-38-2	Arsenic	8.8			F
7440-39-3	Barium	97.9		E	P
7440-41-7	Beryllium	0.89	B		P
7440-43-9	Cadmium	3.1			P
7440-70-2	Calcium	13500			P
7440-47-3	Chromium	19.9			P
7440-48-4	Cobalt	11.9			P
7440-50-8	Copper	21.2			P
7439-89-6	Iron	25300			P
7439-92-1	Lead	14.8			F
7439-95-4	Magnesium	5210			P
7439-96-5	Manganese	571		N	P
7439-97-6	Mercury	0.12	U		CV
7439-98-7	Molybdenum	5.2			P
7440-02-0	Nickel	27.3			P
7440-09-7	Potassium	964	B		A
7782-49-2	Selenium	0.47	U		F
7440-22-4	Silver	4.6			P
7440-23-5	Sodium	42.7	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	29.3			P
7440-66-6	Zinc	61.4		E	P
	Cyanide	0.12	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

61233

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6522

Level (low/med): Date Received: 04/30/91

% Solids: 87.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7120			P
7440-36-0	Antimony	21.7		N	P
7440-38-2	Arsenic	32.5			F
7440-39-3	Barium	56.1		E	P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	3.3			P
7440-70-2	Calcium	38000			P
7440-47-3	Chromium	15.8			P
7440-48-4	Cobalt	9.1	B		P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	12900			P
7439-92-1	Lead	29.7		+	F
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	465		N	P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	19.5			P
7440-09-7	Potassium	742	B		A
7782-49-2	Selenium	0.45	U	W	F
7440-22-4	Silver	7.7			P
7440-23-5	Sodium	66.4	B		P
7440-28-0	Thallium	0.45	U		F
7440-62-2	Vanadium	20.3			P
7440-66-6	Zinc	79.5		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

61240

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Lab Sample ID: FF 6523

Level (low/med): Date Received: 04/30/91

% Solids: 89.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8110			P
7440-36-0	Antimony	30.2		N	P
7440-38-2	Arsenic	5.1			F
7440-39-3	Barium	63.4		E	P
7440-41-7	Beryllium	0.74	B		P
7440-43-9	Cadmium	5.3			P
7440-70-2	Calcium	66800			P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	10.1	B		P
7440-50-8	Copper	17.5			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	9.9			F
7439-95-4	Magnesium	20500			P
7439-96-5	Manganese	530		N	P
7439-97-6	Mercury	0.11	U		CV
7439-98-7	Molybdenum	4.0			P
7440-02-0	Nickel	27.5			P
7440-09-7	Potassium	752	B		A
7782-49-2	Selenium	0.44	U		F
7440-22-4	Silver	9.1			P
7440-23-5	Sodium	97.2	B		P
7440-28-0	Thallium	0.44	U		F
7440-62-2	Vanadium	22.9			P
7440-66-6	Zinc	43.9		E	P
	Cyanide	0.11	U		AS

Color Before: BROWN Clarity Before: N/A Texture: FINE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

7/88

CM 5/13/91

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Initial Calibration Source: NBS_____

Continuing Calibration Source: PLASMACHEM__

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	40000.0	40560.96	101.4	40000.0	41003.23	102.5	40980.00	102.4	P
Antimony	1000.0	1028.00	102.8	1000.0	1029.00	102.9	1041.00	104.1	P
Arsenic	30.0	31.53	105.1	30.0	31.67	105.6	32.28	107.6	F
Barium	1000.0	972.48	97.2	1000.0	978.62	97.9	970.17	97.0	P
Beryllium	500.0	512.51	102.5	500.0	521.50	104.3	520.91	104.2	P
Cadmium	1000.0	988.54	98.9	1000.0	1005.70	100.6	1008.00	100.8	P
Calcium	40000.0	40776.78	101.9	40000.0	41570.26	103.9	41785.28	104.5	P
Chromium	4000.0	4107.24	102.7	4000.0	4184.58	104.6	4192.20	104.8	P
Cobalt	2000.0	1908.49	95.4	2000.0	1942.94	97.1	1943.07	97.2	P
Copper	4000.0	3862.81	96.6	4000.0	3879.45	97.0	3859.57	96.5	P
Iron	40000.0	37812.77	94.5	40000.0	38406.52	96.0	38429.27	96.1	P
Lead	25.0	24.62	98.5	25.0	23.24	93.0	22.71	90.8	F
Magnesium	40000.0	40560.66	101.4	40000.0	40828.88	102.1	40750.36	101.9	P
Manganese	1000.0	1034.30	103.4	1000.0	1051.34	105.1	1052.83	105.3	P
Mercury	4.0	3.63	90.8	4.0	3.63	90.8	3.34	83.5	CV
Molybdenum	4000.0	4103.71	102.6	4000.0	4183.03	104.6	4191.56	104.8	P
Nickel	4000.0	3926.34	98.2	4000.0	3982.19	99.6	3996.00	99.9	P
Potassium	2500.0	2572.00	102.9	2500.0	2590.00	103.6	2590.00	103.6	A
Selenium	25.0	25.88	103.5	25.0	23.44	93.8	24.68	98.7	F
Silver	1000.0	972.22	97.2	1000.0	984.71	98.5	987.49	98.7	P
Sodium	40000.0	40128.20	100.3	40000.0	40238.40	100.6	40027.13	100.1	P
Thallium	25.0	23.86	95.4	25.0	24.09	96.4	25.12	100.5	F
Vanadium	1000.0	978.40	97.8	1000.0	995.71	99.6	997.18	99.7	P
Zinc	4000.0	4000.15	100.0	4000.0	4084.67	102.1	4101.76	102.5	P
Cyanide	100.0	103.16	103.2	100.0	99.57	99.6	100.17	100.2	AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

CM 5/13/91

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				40000.0	40470.89	101.2			P
Antimony				1000.0	1048.00	104.8			P
Arsenic				30.0	28.69	95.6	26.96	89.9	F
Barium				1000.0	952.48	95.2			P
Beryllium				500.0	517.33	103.5			P
Cadmium				1000.0	1007.25	100.7			P
Calcium				40000.0	41324.36	103.3			P
Chromium				4000.0	4153.76	103.8			P
Cobalt				2000.0	1927.86	96.4			P
Copper				4000.0	3807.95	95.2			P
Iron				40000.0	38054.87	95.1			P
Lead				25.0	24.07	96.3			F
Magnesium				40000.0	40378.88	100.9			P
Manganese				1000.0	1042.09	104.2			P
Mercury									NR
Molybdenum				4000.0	4154.38	103.9			P
Nickel				4000.0	3932.19	98.3			P
Potassium				2500.0	2585.00	103.4	2575.00	103.0	A
Selenium				25.0	25.86	103.4			F
Silver				1000.0	976.92	97.7			P
Sodium				40000.0	39783.20	99.5			P
Thallium				25.0	25.43	101.7	25.62	102.5	F
Vanadium				1000.0	985.32	98.5			P
Zinc				4000.0	4099.53	102.5			P
Cyanide				100.0	100.01	100.0			AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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Cm 5/13/91

U.S. EPA - CLP

3702

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Initial Calibration Source: NBS

Continuing Calibration Source: PLASMACHEM

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic	30.0	29.57	98.6	30.0	28.38	94.6			F
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	25.0	25.20	100.8	25.0	24.54	98.2	24.02	96.1	F
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium	25.0	27.21	108.8	25.0	24.47	97.9			F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

7/88

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U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Initial Calibration Source: NBS_____

Continuing Calibration Source: PLASMACHEM__

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead	25.0	24.83	99.3	25.0	27.54	110.2	26.70	106.8	F
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium	25.0	26.71	106.8	25.0	23.77	95.1	25.77	103.1	F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Initial Calibration Source: NBS_____

Continuing Calibration Source: PLASMACHEM__

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium				25.0	25.84	103.4			F
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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Cm 5/13/91

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2B
CRDL STANDARD FOR AA AND ICP

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

AA CRDL Standard Source: SPEX_____

ICP CRDL Standard Source: SPEX_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	110.99	92.5	110.30	91.9
Arsenic	10.0	11.25	112.5					
Barium								
Beryllium				10.0	9.94	99.4	9.94	99.4
Cadmium				10.0	11.59	115.9	11.21	112.1
Calcium								
Chromium				20.0	23.76	118.8	23.00	115.0
Cobalt				100.0	103.59	103.6	102.60	102.6
Copper				50.0	54.61	109.2	52.06	104.1
Iron								
Lead	3.0	3.02	100.7					
Magnesium								
Manganese				30.0	30.42	101.4	30.09	100.3
Mercury	0.2	0.07	35.0					
Nickel				80.0	82.91	103.6	81.64	102.0
Potassium								
Selenium	5.0	5.37	107.4					
Silver				20.0	17.58	87.9	18.42	92.1
Sodium								
Thallium	10.0	10.95	109.5					
Vanadium				100.0	99.90	99.9	99.74	99.7
Zinc				40.0	44.94	112.4	46.75	116.9

FORM II (PART 2) - IN

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Cm 5/13/91

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3
BLANKS

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	60.0	U	60.0	U	60.0	U	60.0	U	60.0	U	P
Antimony	30.0	U	30.0	U	30.0	U	30.0	U	30.0	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Calcium	20.0	U	20.0	U	20.0	U	31.8	B	20.0	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Cobalt	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Magnesium	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.2	U	CV
Molybdenum	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Nickel	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	P
Potassium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	A
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Silver	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Sodium	100.0	U	100.0	U	100.0	U	100.0	U	100.0	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Zinc	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Cyanide	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	AS

FORM III - IN

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3
BLANKS

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			2.0	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium			100.0	U							A
Selenium	2.0	U	2.0	U							F
Silver											NR
Sodium											NR
Thallium			2.0	U							F
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

7/88

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3
BLANKS

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	2.0	U	2.0	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
lcium											NR
romium											NR
obalt											NR
Copper											NR
Iron											NR
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium											NR
Manganese											NR
Mercury											NR
Molybdenum											NR
Nickel											NR
Potassium											NR
Selenium	2.0	U	2.0	U	2.0	U	2.0	U			F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

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Cm 5/13/91

U.S. EPA - CLP

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No: SDG No.: 61093

ICP ID Number: TJA ICAP 61 ICS Source: SPEX

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	508856	504979.3	101.0	528347	503191.3	100.6
Antimony								
Arsenic								
Barium		500		460.5	92.1		452.6	90.5
Beryllium		500		451.6	90.3		453.2	90.6
Cadmium		1000		986.4	98.6		990.4	99.0
Calcium	500000	500000	490409	486209.6	97.2	504456	488658.9	97.7
Chromium		500		474.7	94.9		474.7	94.9
Cobalt		500		472.5	94.5		472.9	94.6
Copper		500		488.0	97.6		479.5	95.9
Iron	200000	200000	190100	190565.5	95.3	196477	191200.0	95.6
Lead								
Magnesium	500000	500000	466866	464202.8	92.8	480955	463210.3	92.6
Manganese		500		467.1	93.4		468.5	93.7
Mercury								
Nickel		1000		950.9	95.1		958.9	95.9
Potassium								
Selenium								
Silver		1000		913.2	91.3		913.2	91.3
Sodium								
Thallium								
Vanadium		500		519.1	103.8		521.1	104.2
Zinc		1000		952.7	95.3		963.9	96.4

FORM IV - IN

7/88

Ok 5/13/91

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

61079 S

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: _____ SDG No.: 61093

Matrix: SOIL Level (low/med): _____

% Solids for Sample: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	69.7118		22.6038		111.79	42.1	N	P
Arsenic	75-125	11.5244		3.8114		9.03	85.4		F
Barium	75-125	416.6387		34.0510	B	447.16	85.6		P
Beryllium	75-125	10.2399		0.6484	B	11.18	85.8		P
Cadmium	75-125	15.8517		5.3212		11.18	94.2		P
Calcium									NR
Chromium	75-125	47.1751		8.7419		44.72	85.9		P
Cobalt	75-125	97.1673		7.4228	B	111.79	80.3		P
Copper	75-125	61.1040		15.4046		55.89	81.8		P
Iron									NR
Lead	75-125	16.8667		11.9647		4.52	108.5		F
Magnesium									NR
Manganese	75-125	466.3626		390.6142		111.79	67.8	N	P
Mercury	75-125	0.6705		0.1140	U	0.57	117.6		CV
Molybdenum	75-125	191.4056		4.1362		223.58	83.8		P
Nickel	75-125	114.8747		22.4249		111.79	82.7		P
Potassium									NR
Selenium	75-125	1.9644		0.4516	U	2.26	86.9		F
Silver	75-125	17.0367		7.6464		11.18	84.0		P
Sodium									NR
Thallium	75-125	8.4740		0.4516	U	11.29	75.1		F
Vanadium	75-125	109.0840		13.9513		111.79	85.1		P
Zinc	75-125	156.6839		59.1813		111.79	87.2		P
Cyanide	75-125	6.2729		0.3704	B	5.67	104.1		AS

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

61079 A

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

Matrix: ____SOIL_____ Level (low/med): _____

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		282.10		101.10		200.0	90.5		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese		4842.40		1747.10		3500.0	88.4		P
Mercury									NR
Molybdenum									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

61079 D

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Level (low/med):

% Solids for Sample: 87.7 % Solids for Duplicate: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		4170.0539		4854.8495		15.2		P
Antimony	13.4	22.6038		21.4954		5.0		P
Arsenic	2.3	3.8114		4.1794		9.2		F
Barium		34.0510	B	34.6140	B	1.6		P
Beryllium		0.6484	B	0.6096	B	6.2		P
Cadmium	1.1	5.3212		5.2610		1.1		P
Calcium		129633.8677		108081.1497		18.1		P
Chromium	2.2	8.7419		10.8380		21.4		P
Cobalt		7.4228	B	7.7898	B	4.8		P
Copper	5.6	15.4046		15.3539		0.3		P
Iron		9610.3025		10207.7289		6.0		P
Lead		11.9647		12.5450		4.7		F
Magnesium		24290.9875		23319.2364		4.1		P
Manganese		390.6142		424.3540		8.3		P
Mercury		0.1140	U	0.1140	U			CV
Molybdenum		4.1362		3.9965		3.4		P
Nickel	8.9	22.4249		21.9018		2.4		P
Potassium		692.1993	B	756.1782	B	8.8		A
Selenium		0.4516	U	0.4516	U			F
Silver	2.2	7.6464		8.3092		8.3		P
Sodium		140.4521	B	146.4940	B	4.2		P
Thallium		0.4516	U	0.4516	U			F
Vanadium	11.2	13.9513		15.2184		8.7		P
Zinc		59.1813		72.3213		20.0		P
Cyanide		0.3704	B	0.3524	B	5.0		AS

FORM VI - IN

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7

LABORATORY CONTROL SAMPLE

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Solid LCS Source:

Aqueous LCS Source: SPEX

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	2000.0	2079.49	104.0						
Antimony	500.0	547.50	109.5						
Arsenic	40.0	40.17	100.4						
Barium	2000.0	2010.02	100.5						
Beryllium	50.0	48.02	96.0						
Cadmium	50.0	51.44	102.9						
Calcium	2000.0	2044.32	102.2						
Chromium	200.0	200.60	100.3						
Cobalt	500.0	488.34	97.7						
Copper	250.0	240.64	96.3						
Iron	1000.0	997.07	99.7						
Lead	20.0	17.20	86.0						
Magnesium	2000.0	2079.42	104.0						
Manganese	500.0	497.03	99.4						
Mercury									
Molybdenum	1000.0	1029.34	102.9						
Nickel	500.0	497.01	99.4						
Potassium	2000.0	1976.00	98.8						
Selenium	10.0	10.53	105.3						
Silver	50.0	47.72	95.4						
Sodium	2000.0	2030.48	101.5						
Thallium	50.0	53.49	107.0						
Vanadium	500.0	494.64	98.9						
Zinc	500.0	491.29	98.3						
Cyanide	100.0	91.55	91.6						

FORM VII - IN

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8
STANDARD ADDITION RESULTS

Name: IT_OAK_RIDGE_____ Contract:FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.:_____ SDG No.:61093_

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
61100	AS	11.72	10.00	20.77	15.00	25.80	20.00	29.96	38.2	0.9997	
61205	PB	8.400	5.00	12.97	10.00	18.18	15.00	22.00	73.8	0.9983	
61233	PB	12.61	5.00	17.27	10.00	23.69	15.00	26.69	131.2	0.9915	+

FORM VIII - IN 7/88

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9
ICP SERIAL DILUTION

EPA SAMPLE NO.

61079 L

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

Matrix (soil/water): SOIL Level (low/med):

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	18651.40		19230.00		3.1		P
Antimony	101.10		150.00	U	100.0		P
Arsenic							
Barium	152.30	B	168.50	B	10.6	E	P
Beryllium	2.90	B	10.00	U	100.0		P
Cadmium	23.80		29.50		23.9		P
Calcium	579813.40		589000.00		1.6		P
Chromium	39.10		128.00		227.4		P
Cobalt	33.20	B	50.00	U	100.0		P
Copper	68.90		92.50	B	34.3		P
Iron	42984.00		46860.00		9.0		P
Lead							
Magnesium	108646.30		114450.00		5.3		P
Manganese	1747.10		1916.50		9.7		P
Mercury							
Molybdenum	18.50		50.00	U	100.0		P
Nickel	100.30		121.00	B	20.6		P
Potassium							
Selenium							
Silver	34.20		125.50		267.0		P
Sodium	628.20	B	701.00	B	11.6		P
Thallium							
Vanadium	62.40		102.50	B	64.3		P
Zinc	264.70		302.00		14.1	E	P
Cyanide							

FORM IX - IN

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: TJA_ICAP_61 Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	60.0	P
Antimony	206.84		60	30.0	P
Arsenic	189.04		10	50.0	P
Barium	493.41		200	2.0	P
Beryllium	313.04		5	2.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	10.0	P
Cobalt	228.62		50	10.0	P
Copper	324.75		25	10.0	P
Iron	259.94		100	10.0	P
Lead	220.35		3	40.0	P
Magnesium	279.08		5000	50.0	P
Manganese	257.61		15	2.0	P
Mercury			0.2		NR
Molybdenum	202.03			10.0	P
Nickel	231.60		40	20.0	P
Potassium			5000		NR
Selenium	196.03		5	80.0	P
Silver	328.07		10	10.0	P
Sodium	589.00		5000	100.0	P
Thallium	377.57		10	150.0	P
Vanadium	292.40		50	10.0	P
Zinc	213.86		20	5.0	P
Cyanide			10		NR

Comments:

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Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA1_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	3	2.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Molybdenum					NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium	276.80	BZ	10	2.0	F
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

Cm 5/13/91

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10
Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: Date: 03/28/91

Flame AA ID Number :

Furnace AA ID Number : PE_HGA2_ZEEM

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	2.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BZ	3	2.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Molybdenum					NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	2.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

Cm 5/13/91

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10
Instrument Detection Limits (Quarterly)

b Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: Date: 03/28/91

Flame AA ID Number : TJA_SH_22

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Molybdenum					NR
Nickel			40		NR
Potassium	766.50	BS	5000	100.0	A
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	570.00		10	2.0	AS

Comments:

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Instrument Detection Limits (Quarterly)

Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: Date: 03/28/91

Flame AA ID Number : BUCK_400

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70	BD	0.2	0.2	CV
Molybdenum					NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

FORM X - IN 7/88

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11A

ICP Interelement Correction Factors (Annually)

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS
Aluminum	308.22	0.0000000	0.0003700	0.0000000	0.0002000	0.0000000
Antimony	206.84	0.0031000	0.0000000	0.0005600	0.0002400	0.0000000
Arsenic	189.04	0.0020000	0.0001000	0.0008000	0.0003900	0.0000000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000500	0.0000000	0.0072000
Calcium	317.93	0.0000000	0.0000000	0.0003700	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0001400	0.0001000	0.0001300	0.0000000
Cobalt	228.62	0.0000000	0.0000000	0.0001000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron	259.94	0.0000000	0.0000900	0.0000000	0.0001000	0.0000000
Lead	220.35	0.0012000	0.0000400	0.0007000	0.0004000	0.0000000
Magnesium	279.08	0.0000000	0.0005400	0.0009000	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	0.0000500	0.0000500	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0004600	0.0003800	0.0000000
Potassium						
Selenium	196.03	0.0036000	0.0000000	0.0015000	0.0004000	0.0000000
Silver	328.07	0.0000000	0.0001000	0.0000000	0.0000000	0.0000000
Sodium	589.00	0.0003600	0.0002000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0017000	0.0000000	0.0001000	0.0000000
Vanadium	292.40	0.0000000	0.0000600	0.0000000	0.0000000	0.0000000
Zinc	213.86	0.0000000	0.0000000	0.0001800	0.0000000	0.0000000

Comments:

FORM XI (Part 1) - IN 7/88

Cm 5/13/91

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11B
ICP Interelement Correction Factors (Annually)

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672 SAS No.: _____ SDG No.: 61093_

ICP ID Number: TJA-ICAP-61_ Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : CO_	CR_	CU_	MN_	MO_
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0019000	0.0078000
Antimony	206.84	0.0000000	0.0076000	0.0000000	0.0003600	0.0071000
Arsenic	189.04	0.0000000	0.0065000	0.0000000	0.0008700	0.0043000
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0010000	0.0000000	0.0005500	0.0011000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0004600	0.0006600
Cobalt	228.62	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0005500
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0016000	0.0004800
Lead	220.35	0.0020000	0.0000000	0.0015000	0.0009000	0.0028000
Magnesium	279.08	0.0000000	0.0014000	0.0000000	0.0030000	0.0017000
Manganese	257.61	0.0020000	0.0000000	0.0000000	0.0000000	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium						
Selenium	196.03	0.0020000	0.0000000	0.0000000	0.0013000	0.0014000
Silver	328.07	0.0000000	0.0000000	0.0000900	0.0001000	0.0000000
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	377.57	0.0000000	0.0000000	0.0000000	0.0003000	0.0027000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0001000	0.0011000
Zinc	213.86	0.0000000	0.0000000	0.0046000	0.0000000	0.0000000

Comments:

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11B
ICP Interelement Correction Factors (Annually)

3702

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: TJA ICAP 61 Date: 06/05/90

Analyte	Wave-length (nm)	Interelement Correction Factors for : NI	TI	V	ZN	
Aluminum	308.22	0.0001300	0.0027000	0.0238000	0.0000000	
Antimony	206.84	0.0001600	0.0014000	0.0005700	0.0010000	
Arsenic	189.04	0.0001500	0.0008000	0.0009000	0.0000000	
Barium	493.41	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0055000	0.0000000	
Cadmium	228.80	0.0001400	0.0000000	0.0001000	0.0000000	
Calcium	317.93	0.0000000	0.0006000	0.0008000	0.0000000	
Chromium	267.72	0.0000000	0.0000000	0.0007000	0.0000000	
Cobalt	228.62	0.0007200	0.0013000	0.0000000	0.0000000	
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	
Iron	259.94	0.0000000	0.0000000	0.0003300	0.0000000	
Lead	220.35	0.0017500	0.0007000	0.0004200	0.0000000	
Magnesium	279.08	0.0000000	0.0010000	0.0013000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Potassium						
Selenium	196.03	0.0002600	0.0003000	0.0007700	0.0000000	
Silver	328.07	0.0000000	0.0003000	0.0001900	0.0000000	
Sodium	589.00	0.0000000	0.0003000	0.0000000	0.0000000	
Thallium	377.57	0.1137000	0.0022000	0.0071000	0.0000000	
Vanadium	292.40	0.0000000	0.0005000	0.0000000	0.0000000	
Zinc	213.86	0.0032800	0.0000000	0.0001700	0.0000000	

Comments:

FORM XI (Part 1) - IN 7/88

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ICP Linear Ranges (Quarterly)

3702

Lab Name: IT_OAK_RIDGE Contract: FERNALD

Lab Code: ITMWL Case No.: 36672 SAS No.: SDG No.: 61093

ICP ID Number: TJA ICAP 61 Date: 03/28/91

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	10.00	1000000.0	
Antimony	10.00	10000.0	
Arsenic	10.00	1000000.0	
Barium	10.00	15000.0	
Beryllium	10.00	5000.0	
Cadmium	10.00	10000.0	
Calcium	10.00	700000.0	
Chromium	10.00	50000.0	
Cobalt	10.00	20000.0	
Copper	10.00	50000.0	
Iron	10.00	50000.0	
Lead	10.00	1000000.0	
Magnesium	10.00	350000.0	
Manganese	10.00	10000.0	
Mercury			NR
Molybdenum	10.00	50000.0	
Nickel	10.00	50000.0	
Potassium			NR
Selenium	10.00	100000.0	
Silver	10.00	5000.0	
Sodium	10.00	400000.0	
Thallium	10.00	200000.0	
Vanadium	10.00	10000.0	
Zinc	10.00	50000.0	
Cyanide			

Comments:

FORM XII - IN 7/88

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PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36672 SAS No.: _____ SDG No.:61093_

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61093	05/02/91	1.02	200
61100	05/02/91	1.01	200
61107	05/02/91	1.01	200
61114	05/02/91	1.02	200
61135	05/02/91	1.00	200
61142	05/02/91	1.00	200
61205	05/02/91	1.02	200
61212	05/02/91	1.02	200
61233	05/02/91	1.01	200
61240	05/02/91	1.01	200

FORM XIII - IN 7/88

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PREPARATION LOG

3702

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36672 SAS No.: _____ SDG No.:61093_

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61093	05/02/91	1.00	200
61100	05/02/91	1.01	200
61107	05/02/91	1.00	200
61114	05/02/91	1.02	200
61135	05/02/91	1.01	200
61142	05/02/91	1.01	200
61205	05/02/91	1.02	200
61212	05/02/91	1.02	200
61233	05/02/91	1.01	200
61240	05/02/91	1.01	200

FORM XIII - IN 7/88

Ch 5/13/91

U.S. EPA - CLP

13
PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36672 SAS No.: _____ SDG No.:61093_

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61093	05/02/91	0.20	100
61100	05/02/91	0.20	100
61107	05/02/91	0.20	100
61114	05/02/91	0.20	100
61135	05/02/91	0.20	100
61142	05/02/91	0.20	100
61205	05/02/91	0.20	100
61212	05/02/91	0.20	100
61233	05/02/91	0.20	100
61240	05/02/91	0.20	100

FORM XIII - IN 7/88

Cm
5/15/91

U.S. EPA - CLP

13
PREPARATION LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.:_36672 SAS No.: _____ SDG No.:61093_

Method: AS

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
61093	05/01/91	5.03	250
61100	05/01/91	5.07	250
61107	05/01/91	5.01	250
61114	05/01/91	5.16	250
61135	05/01/91	5.21	250
61142	05/01/91	5.05	250
61205	05/01/91	5.02	250
61212	05/01/91	5.11	250
61233	05/01/91	5.12	250
61240	05/01/91	5.22	250

FORM XIII - IN 7/88

Chm 5/13/91

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672_ SAS No.: _____ SDG No.:61093_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 05/03/91 End Date: 05/07/91

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CV	1.00	1007		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1036		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1059		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1158		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICV	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ZZZZZ	1.00	1220																-		-							-
CV	1.00	1225		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICB	1.00	1233		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSA	1.00	1238		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
ICSAB	1.00	1244		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CRI	1.00	1249		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1254		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCV	1.00	1257		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
	1.00	1306		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
	1.00	1311		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCB	1.00	1315		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
PBW	1.00	1319		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
LCSW	1.00	1322		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61093	1.00	1326		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61100	1.00	1337		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61107	1.00	1340		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61114	1.00	1344		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61135	1.00	1349		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61142	1.00	1356		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61205	1.00	1400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61212	1.00	1404		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCV	1.00	1408		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1412		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CV	1.00	1414		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
CCB	1.00	1418		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61233	1.00	1422		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-
61240	1.00	1425		X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	X	-	X	X	X	X	X	X	-

FORM XIV - IN 7/88

CM
5/13/91

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Name: IT_OAK_RIDGE_____ Contract: FERNALD___

Lab Code: ITMWL_ Case No.: 36672_ SAS No.: _____ SDG No.:61093_

Instrument ID Number: TJA ICAP 61__ Method: P_

Start Date: 05/03/91 End Date: 05/07/91

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICSA	1.00	1430		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
ICSAB	1.00	1434		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CRI	1.00	1437		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CV	1.00	1441		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CCV	1.00	1444		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CV	1.00	1448		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CV	1.00	1450		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
CCB	1.00	1454		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	_	X	X	X	X	X	X	_
ZZZZZ	1.00	1530		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	1545		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	1552		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	1558		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	1604		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZ	1.00	1615		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZ	1.00	1624		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	0904		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
ZZZZZ	1.00	0908		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

FORM XIV - IN 7/88

Cm 5/13/91

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61098

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6494

Sample wt/vol: 29.5 (g/mL) G Lab File ID: FF6494

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 17 dec. ---- Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	bis(2-Chloroisopropyl)Ether	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61098

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6494

Sample wt/vol: 29.5 (g/mL) G Lab File ID: FF6494

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 17 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	810	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U
117-84-0	Di-n-Octyl Phthalate	410	U
205-99-2	Benzo(b)Fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)Anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

(1) - Cannot be separated from Diphenylamine

3702

EPA SAMPLE NO.

61098

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6494

Sample wt/vol: 29.5 (g/mL) G Lab File ID: FF6494

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 17 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 1.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	10000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	480	AJ
3.	UNKNOWN C7H8	5.58	330	J
4.	UNKNOWN	38.37	260	J
5. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	200	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No.

61105

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6495

Sample wt/vol: 29.7 (g/mL) G Lab File ID: FF6495

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 21 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl Alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	bis(2-Chloroisopropyl)Ether	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-Di-n-Propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61105

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6495

Sample wt/vol: 29.7 (g/mL) G Lab File ID: FF6495

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 21 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
84-74-2	Di-n-Butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	840	U
56-55-3	Benzo(a)Anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)Phthalate	100	J
117-84-0	Di-n-Octyl Phthalate	420	U
205-99-2	Benzo(b)Fluoranthene	420	U
207-08-9	Benzo(k)Fluoranthene	420	U
50-32-8	Benzo(a)Pyrene	420	U
193-39-5	Indeno(1,2,3-cd)Pyrene	420	U
53-70-3	Dibenz(a,h)Anthracene	420	U
191-24-2	Benzo(g,h,i)Perylene	420	U

(1) - Cannot be separated from Diphenylamine

3702

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61105

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6495

Sample wt/vol: 29.7 (g/mL) G Lab File ID: FF6495

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 21 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.3 Dilution Factor: 1.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	14000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	660	AJ
3. 56335-76-3	2,6-DECADIENE-4,5-DIOL, 6-ET	31.47	320	J
4.	UNKNOWN C7H8	5.58	390	J
5. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	280	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
3702
61112

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6496

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6496

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

WS05.03.91

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61112

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6496

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6496

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

1/87 Rev.

WSSS0391

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61112

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6496

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6496

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.12	15000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	730	AJ
3.	UNKNOWN C7H8	5.58	460	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	320	BJ
5. 40348-72-9	PENTANOIC ACID, 2-HYDROXY-4-	10.39	170	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 3702

61119

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6497

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6497

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

FORM I SV-1 1/87 Rev.

NDS050391

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61119

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6497

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6497

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	780	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

W0S050391

3702

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61119

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6497

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6497

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	12000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	540	AJ
3.	UNKNOWN C7H8	5.58	340	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	230	BJ

WDS050391

3702

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61140

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6498

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6498

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

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MDS050391

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61140

) Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6498

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6498

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	40	J
129-00-0	Pyrene	45	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61140

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6498

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6498

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/03/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.13	20000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	1000	AJ
3. 123-79-5	HEXANEDIOIC ACID, DIOCTYL ES	28.01	600	J
4.	UNKNOWN C7H8	5.58	610	J
5. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	440	BJ
6.	UNKNOWN HYDROCARBON	34.81	220	J
7.	ALDOL CONDENSATION PRODUCT	10.39	230	AJ

W0505039 1

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61147

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6499

Sample wt/vol: 29.8 (g/mL) G Lab File ID: FF6499

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 11 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl Alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)Ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic Acid	1800	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

3702

EPA SAMPLE NO.

61147

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6499

Sample wt/vol: 29.8 (g/mL) G Lab File ID: FF6499

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 11 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	370	U
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

3702

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61147

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6499

Sample wt/vol: 29.8 (g/mL) G Lab File ID: FF6499

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 11 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

Number TICs found: 5

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	11000	AJ
2. 123-79-5	HEXANEDIOIC ACID, DIOCTYL ES	28.01	2500	J
3.	ALDOL CONDENSATION PRODUCT	6.57	520	AJ
4.	UNKNOWN C7H8	5.58	320	J
5. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	220	BJ

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3702

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

61210

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6500

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6500

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)Ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

MOS0503 91

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61210

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6500

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6500

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	800	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	400	U
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 1/87 Rev.

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3702

EPA SAMPLE NO.

61210

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6500

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6500

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 15 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	12000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	550	AJ
3.	UNKNOWN C7H8	5.58	400	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	240	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61217

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6501

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6501

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 3702

61217

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6501

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6501

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	780	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61217

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6501

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6501

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.08	7900	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	350	AJ
3.	UNKNOWN C7H8	5.58	260	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61238

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6502

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6502

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl Alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	bis(2-Chloroisopropyl)Ether	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-Propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic Acid	2000	U
111-91-1	bis(2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61238

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6502

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6502

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	810	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)Phthalate	410	U
117-84-0	Di-n-Octyl Phthalate	410	U
205-99-2	Benzo(b)Fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)Anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
61238

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6502

Sample wt/vol: 29.6 (g/mL) G Lab File ID: FF6502

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 18 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.10	11000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	490	AJ
3.	UNKNOWN C7H8	5.58	340	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	200	BJ

3702

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61245

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6503

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6503

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61245

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6503

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6503

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	780	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	390	U
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61245

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: FF6503

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6503

Level: (low/med) LOW Date Received: 04/30/91

% Moisture: not dec. 13 dec. Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.13	19000	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	960	AJ
3.	UNKNOWN C7H8	5.58	580	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	410	BJ
5.	ALDOL CONDENSATION PRODUCT	10.39	210	AJ

WDS050391

3702

EPA SAMPLE NO.

SBLKB1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: Q2281

Sample wt/vol: 30.0 (g/mL) G Lab File ID: Q2281B

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl Alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)Ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-Propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic Acid	1600	U
111-91-1	bis(2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

3702

EPA SAMPLE NO.

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKB1

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: Q2281

Sample wt/vol: 30.0 (g/mL) G Lab File ID: Q2281B

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-Octyl Phthalate	330	U
205-99-2	Benzo(b)Fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)Anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

1/87 Rev.

WDS050391

3702

EPA SAMPLE NO.

SBLKB1

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36672 SAS No.: NA SDG No.: 61093

Matrix: (soil/water) SOIL Lab Sample ID: Q2281

Sample wt/vol: 30.0 (g/mL) G Lab File ID: Q2281B

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. ____ dec. ____ Date Extracted: 05/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.12	380	AJ
2.	ALDOL CONDENSATION PRODUCT	6.57	18	AJ
3.	UNKNOWN C7H8	5.58	14	J
4. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.62	7.8	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61049

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6331

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6331

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)Ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

MDS05C191

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61049

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6331

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6331

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	800	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1100	
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61049

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6331

Sample wt/vol: 29.1 (g/mL) G Lab File ID: FF6331

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.15	14000	AJ
2.	UNKNOWN C7H8	5.62	740	J
3.	UNKNOWN	38.46	410	J
4. 15120-99-7	ETHANONE, 1-(TRIMETHYLOXIRAN	10.00	220	J
5. 29021-98-5	1,3-DIOXOLANE-2-PROPANOL, 2-	6.60	200	J
6. 5166-53-0	3-HEXEN-2-ONE, 5-METHYL-	9.19	200	J
7.	UNKNOWN HYDROCARBON	34.84	190	J
8.	UNKNOWN HYDROCARBON	32.49	190	J

3702

EPA SAMPLE NO.

61056

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FF6332

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	52	J
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)Ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	73	J
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

MDS050191

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61056

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FF6332

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 13 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	760	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	380	U
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

61056

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FF6332

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 13 dec. Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.00

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.17	21000	AJ
2.	UNKNOWN C7H8	5.62	1000	J
3.	UNKNOWN C19H40	20.90	390	J
4.	ALDOL CONDENSATION PRODUCT	6.62	430	AJ
5.	UNKNOWN HYDROCARBON	29.01	230	J
6.	UNKNOWN HYDROCARBON	19.60	180	J
7.	UNKNOWN HYDROCARBON	23.19	170	J
8.	UNKNOWN HYDROCARBON	22.05	160	J
9.	UNKNOWN HYDROCARBON	22.14	160	J
10.	UNKNOWN HYDROCARBON	18.29	160	J
11.	UNKNOWN HYDROCARBON	32.49	220	J
12.	UNKNOWN HYDROCARBON	27.22	160	J
13. 2396-74-9	2H-PYRAN-2,3-DIOL, TETRAHYDR	10.02	260	J
14.	UNKNOWN HYDROCARBON	30.67	160	J
15.	UNKNOWN HYDROCARBON	34.84	180	J
16. 17257-81-7	ETHANONE, 1-(3-ETHYLOXIRANYL	8.97	200	J
17.	UNKNOWN C6H10	4.02	170	J
18. 5166-53-0	3-HEXEN-2-ONE, 5-METHYL-	9.19	170	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61070

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6333

Sample wt/vol: 29.9 (g/mL) G Lab File ID: FF6333R

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/30/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.20	44000	AJ
2. 123-79-5	HEXANEDIOIC ACID, DIOCTYL ES	28.02	6800	BJ
3.	ALDOL CONDENSATION PRODUCT	6.62	2700	AJ
. 5745-75-5	1,3-DIOXOLANE-2-BUTANOL, 2-M	8.64	900	BJ
5. 2396-74-9	2H-PYRAN-2,3-DIOL, TETRAHYDR	10.00	780	J
6. 40710-43-8	PENTON	28.99	310	J
7.	UNKNOWN HYDROCARBON	32.47	370	J
8.	UNKNOWN HYDROCARBON	34.82	340	J
9.	UNKNOWN HYDROCARBON	30.67	220	J
10. 3790-71-4	2,6,10-DODECATRIEN-1-OL, 3,7	31.74	240	J
11.	UNKNOWN C7H8	5.60	180	J
12. 5166-53-0	3-HEXEN-2-ONE, 5-METHYL-	9.17	180	J

3702

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61070

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6333

Sample wt/vol: 29.9 (g/mL) G Lab File ID: FF6333R

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/30/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl Alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)Ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

WS05091

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61070

) Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6333

Sample wt/vol: 29.9 (g/mL) G Lab File ID: FF6333R

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/30/91

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	780	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1000	
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	390	U
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61091

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6337

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6337

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 12 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.15	13000	AJ
2.	UNKNOWN C7H8	5.60	660	J
3. 1610-18-0	PROMETON	21.44	240	J
4.	ALDOL CONDENSATION PRODUCT	6.62	250	AJ

MDS050191

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61091

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6337

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6337

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 12 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)Ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

MDS050191

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61091

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6337

Sample wt/vol: 29.3 (g/mL) G Lab File ID: FF6337

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 12 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	760	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1300	
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61280

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6334

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6334

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)Ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61280

Lab Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6334

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6334

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	800	U
56-55-3	Benzo(a)Anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	62	J
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	400	U
207-08-9	Benzo(k)Fluoranthene	400	U
50-32-8	Benzo(a)Pyrene	400	U
193-39-5	Indeno(1,2,3-cd)Pyrene	400	U
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	400	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

61280

b Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6334

Sample wt/vol: 29.2 (g/mL) G Lab File ID: FF6334

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 15 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.0

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATION PRODUCT	7.18	26000	AJ
2.	UNKNOWN C7H8	5.62	1600	J
3.	UNKNOWN	38.47	720	J
4.	ALDOL CONDENSATION PRODUCT	6.62	500	AJ
5. 15120-99-7	ETHANONE, 1-(TRIMETHYLOXIRAN	10.02	220	J
6. 5166-53-0	3-HEXEN-2-ONE, 5-METHYL-	9.19	200	J
7.	UNKNOWN	31.76	180	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61287

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6335

Sample wt/vol: 29.9 (g/mL) G Lab File ID: FF6335

Level: (low/med) LOW Date Received: 04/24/91

% Moisture: not dec. 14 dec. Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl Alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)Ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

61287

Name: ITAS-OAK RIDGE Contract: ADV

Lab Code: IT-MWL Case No.: 36661 SAS No.: NA SDG No.: 61044

Matrix: (soil/water) SOIL Lab Sample ID: FF6335

Sample wt/vol: 29.9 (g/mL) G Lab File ID: FF6335

Level: (low/med) LOW Date Received: 04/24/91

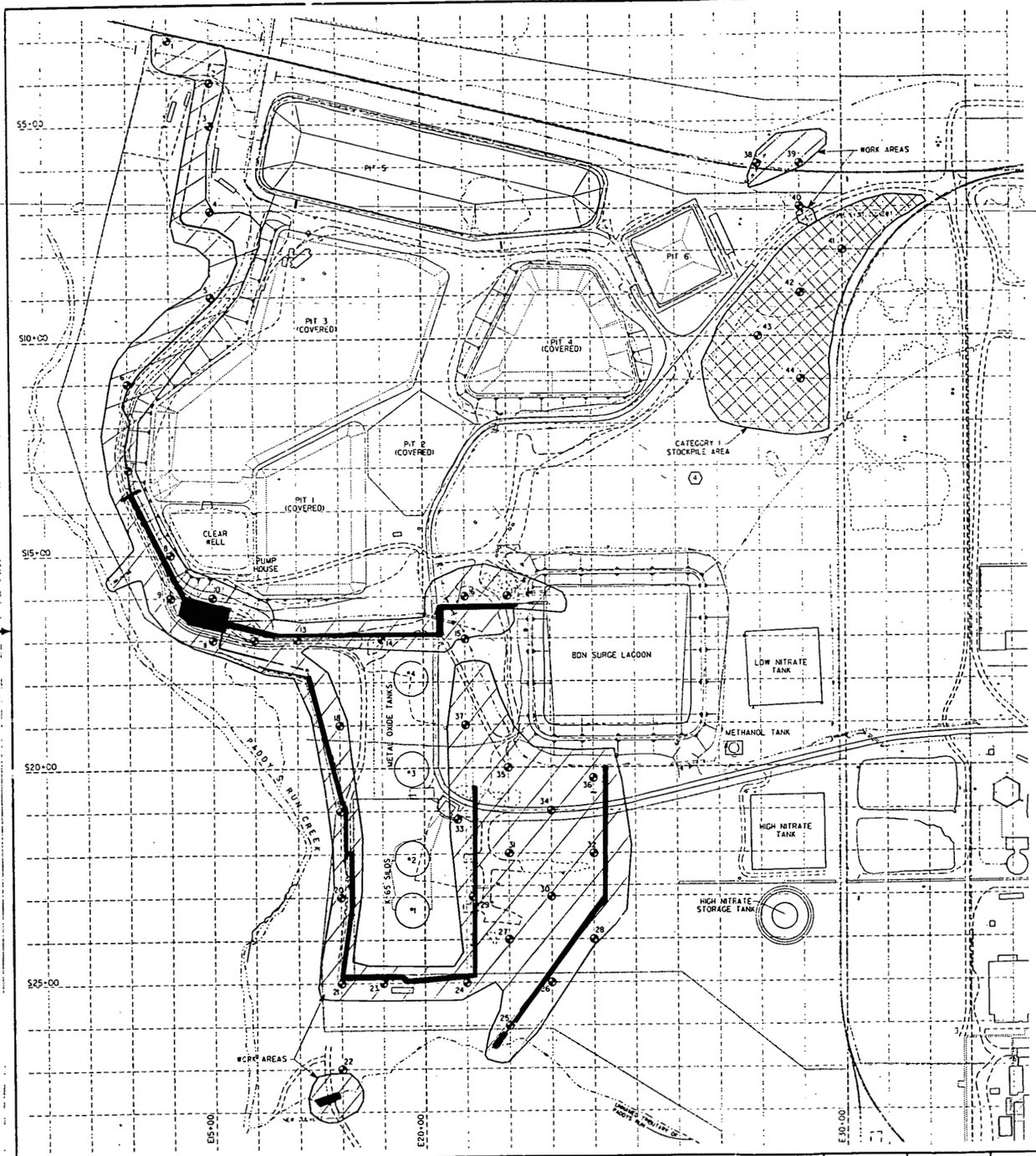
% Moisture: not dec. 14 dec. ____ Date Extracted: 04/25/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/26/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	770	
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	380	U

(1) - Cannot be separated from Diphenylamine



SAMPLE LOCATION	FMPC SITE COORDINATES EAST COORD.	SOUTH COORD.	SAMPLE NO. (7) 0'-6'	6'-12'	12'-18'	18'-24'
#PA 1	1400.00'	300.00'				
#PA 2	1500.00'	400.00'				
#PA 3	1500.00'	500.00'				
#PA 4	1500.00'	700.00'				
#PA 5	1500.00'	900.00'				
#PA 6	1300.00'	900.00'				
#PA 7	1300.00'	1300.00'				
#PA 8	1400.00'	1500.00'				
#PA 9	1400.00'	1600.00'				
#PA 10	1500.00'	1600.00'				
#PA 11	1500.00'	1700.00'				
#PA 12	1600.00'	1700.00'				
#PA 13	1700.00'	1700.00'				
#PA 14	1900.00'	1700.00'				
#PA 15	2100.00'	1700.00'				
#PA 16	2100.00'	1600.00'				
#PA 17	2200.00'	1600.00'				
#PA 18	1800.00'	1900.00'				
#PA 19	1800.00'	2100.00'				
#PA 20	1800.00'	2300.00'				
#PA 21	1800.00'	2500.00'				
#PA 22	1800.00'	2700.00'				
#PA 23	1900.00'	2500.00'				
#PA 24	2100.00'	2500.00'				
#PA 25	2200.00'	2600.00'				
#PA 26	2300.00'	2500.00'				
#PA 27	2200.00'	2400.00'				
#PA 28	2400.00'	2600.00'				
#PA 29	2400.00'	2500.00'				
#PA 30	2300.00'	2500.00'				
#PA 31	2200.00'	2500.00'				
#PA 32	2400.00'	2500.00'				
#PA 33	2079.82'	2699.99'				
#PA 34	2300.00'	2500.00'				
#PA 35	2200.00'	2600.00'				
#PA 36	2400.00'	2605.00'				
#PA 37	2400.00'	2900.00'				
#PA 38	2800.00'	600.00'				
#PA 39	2900.00'	600.00'				
#PA 40	2900.00'	700.00'				
#PA 41	3000.00'	800.00'				
#PA 42	2900.00'	900.00'				
#PA 43	2800.00'	1000.00'				
#PA 44	2900.00'	800.00'				

GENERAL NOTES

1. REFER TO SAMPLING & ANALYSIS PLAN - FMPC WASTE PIT AREA STORMWATER RUN OFF CONTROL PROJECT FOR FURTHER DESCRIPTION OF SAMPLING OBJECTIVES.
2. SAMPLING LOCATION INDICATED #PA.XX.
3. SAMPLES 18 THROUGH 37 MUST BE COORDINATED WITH ONGOING WORK IN THAT AREA.
4. CATEGORY I STOCKPILE AREA IS FOR EXCAVATED EXCESS SOILS CONTAINING LESS THAN 35 DPM/G TOTAL URANIUM AND 10 DPM/G TOTAL THORIUM AND NO ELEVATED CONCENTRATIONS OF HSL'S.
5. SAMPLE NUMBERS WILL BE ADDED WHEN AVAILABLE AND THIS DRAWING WILL BE REVISED.
6. THIS REMOVAL ACTION IS PART OF EHSI LINE ITEM PROJECT, CONTROLLED STORAGE PAD-PLANT 1, ASS NO. 1.1.2.4.01.
7. VOLATILE ORGANIC COMPOUNDS (VOC) SAMPLES SHALL BE COLLECTED AT THE 18" TO 24" RANGE. HOWEVER SAMPLES SHALL BE REMOVED AT SIX INCH INCREMENTS TO A DEPTH OF 24 INCHES. EACH INCREMENT SHALL BE FIELD SCANNED WITH AN HNU. VOC SAMPLES SHALL BE COLLECTED FROM THE INCREMENT WITH THE HIGHEST HNU READING. IF NO INCREMENT HAS AN ABOVE BACKGROUND HNU READING, THE SAMPLE SHALL BE COLLECTED FROM THE BOTTOM SIX INCHES.

DO NOT SCALE: REDUCED DRAWING

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE: WMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

APPROVALS: CHEMICAL, CIVIL & ARCH., ELECTRICAL, ENGINEER, INSTRUMENT, MECHANICAL, CHECKED, APPROVED

WESTINGHOUSE MAT'LS. CO. OF OHIO
FERNALD, OHIO
FEED MATERIALS PRODUCTION CENTER
U.S. DEPARTMENT OF ENERGY

APPROVALS: PROJECT ENG., OPER. UNIT MGR., D.A., JOE CH. BR. CONSTR., PROJ. MANAGER, PROJECT ENGINEER, DOE OPER. UNIT MAN.

WASTE PIT AREA STORMWATER RUNOFF CONTROL
PRE EXCAVATION
SAMPLE LOCATION PLAN
SCALE 1"=100'

75A-5500-G-00168 | 0

FILE NAME: /FA2EPCO.G/INSAGRC.RADON