START 9713517.0798

B017Z1-TMA-236

0046228

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B017Z1 ~~B017ET~~ B017Z1

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-14S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6760.00			P
7440-36-0	Antimony	4.40	B	N	P
7440-38-2	Arsenic	6.80		*	F
7440-39-3	Barium	83.00			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	5.10			P
7440-70-2	Calcium	5820.00		*	P
7440-47-3	Chromium	18.10			P
7440-48-4	Cobalt	5.60	B		P
7440-50-8	Copper	29.80			P
7439-89-6	Iron	11800.00			P
7439-92-1	Lead	38.90		*	F
7439-95-4	Magnesium	3930.00			P
7439-96-5	Manganese	419.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	14.20			P
7440-09-7	Potassium	1470.00			P
7782-49-2	Selenium	0.74	U	W*	F
7440-22-4	Silver	1.00	B		P
7440-23-5	Sodium	302.00	B	E	P
7440-28-0	Thallium	0.61	B		F
7440-62-2	Vanadium	23.60			P
7440-66-6	Zinc	317.00		N	P
	Cyanide				NR

JAN 1997 RECEIVED EDMC

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0003

9713517.0799

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z2
B01722

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-15S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7290.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	4.90		*	F
7440-39-3	Barium	106.00			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	4.50			P
7440-70-2	Calcium	7490.00		*	P
7440-47-3	Chromium	15.40			P
7440-48-4	Cobalt	6.40	B		P
7440-50-8	Copper	30.70			P
7439-89-6	Iron	13000.00			P
7439-92-1	Lead	28.40		*	F
7439-95-4	Magnesium	4310.00			P
7439-96-5	Manganese	533.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	16.00			P
7440-09-7	Potassium	1450.00			P
7782-49-2	Selenium	1.10		*	F
7440-22-4	Silver	1.30	B		P
7440-23-5	Sodium	390.00	B	E	P
7440-28-0	Thallium	0.77	B		F
7440-62-2	Vanadium	26.00			P
7440-66-6	Zinc	322.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0004

9213517.0800

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z3
B017Z3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-16S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6480.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	6.50		*	F
7440-39-3	Barium	84.00			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	2.70			P
7440-70-2	Calcium	11000.00		*	P
7440-47-3	Chromium	14.10			P
7440-48-4	Cobalt	5.80	B		P
7440-50-8	Copper	26.20			P
7439-89-6	Iron	12100.00			P
7439-92-1	Lead	23.20		*	F
7439-95-4	Magnesium	4040.00			P
7439-96-5	Manganese	640.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.30			P
7440-09-7	Potassium	1750.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	1.00	B		P
7440-23-5	Sodium	466.00	B	E	P
7440-28-0	Thallium	0.37	B		F
7440-62-2	Vanadium	26.90			P
7440-66-6	Zinc	256.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0065

9713517.0801

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z4
B01724

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-17S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6830.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	4.80		*	F
7440-39-3	Barium	74.00			P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	3.20			P
7440-70-2	Calcium	4750.00		*	P
7440-47-3	Chromium	15.40			P
7440-48-4	Cobalt	6.40	B		P
7440-50-8	Copper	23.10			P
7439-89-6	Iron	13800.00			P
7439-92-1	Lead	19.10		*	F
7439-95-4	Magnesium	4120.00			P
7439-96-5	Manganese	312.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.60			P
7440-09-7	Potassium	1160.00			P
7782-49-2	Selenium	0.73	B	*	F
7440-22-4	Silver	1.40	B		P
7440-23-5	Sodium	220.00	B	E	P
7440-28-0	Thallium	0.66	B		F
7440-62-2	Vanadium	31.50			P
7440-66-6	Zinc	270.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0006

9713517.0802

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z5
B01725

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-18S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6820.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	4.70		*	F
7440-39-3	Barium	88.30			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	4.50			P
7440-70-2	Calcium	11400.00		*	P
7440-47-3	Chromium	16.70			P
7440-48-4	Cobalt	6.10	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	13300.00			P
7439-92-1	Lead	36.40		*	F
7439-95-4	Magnesium	3950.00			P
7439-96-5	Manganese	370.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.90			P
7440-09-7	Potassium	1300.00			P
7782-49-2	Selenium	1.40		S*	F
7440-22-4	Silver	0.99	U		P
7440-23-5	Sodium	278.00	B	E	P
7440-28-0	Thallium	0.75	B		F
7440-62-2	Vanadium	28.60			P
7440-66-6	Zinc	332.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0007

9713517.0903

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z6
B01726

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-19S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10000.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	9.40		*	F
7440-39-3	Barium	131.00			P
7440-41-7	Beryllium	0.69	B		P
7440-43-9	Cadmium	3.00			P
7440-70-2	Calcium	6690.00		*	P
7440-47-3	Chromium	21.00			P
7440-48-4	Cobalt	9.20	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	17700.00			P
7439-92-1	Lead	36.50		*	F
7439-95-4	Magnesium	5830.00			P
7439-96-5	Manganese	786.00			P
7439-97-6	Mercury	0.10		N	CV
7440-02-0	Nickel	20.80			P
7440-09-7	Potassium	2010.00			P
7782-49-2	Selenium	0.70	U	W*	F
7440-22-4	Silver	1.30	B		P
7440-23-5	Sodium	349.00	B	E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	35.20			P
7440-66-6	Zinc	332.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0008

9713517.0804

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01829

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-01S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7040.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	8.90		*	F
7440-39-3	Barium	84.50			P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium	4.10			P
7440-70-2	Calcium	8350.00		*	P
7440-47-3	Chromium	14.90			P
7440-48-4	Cobalt	7.00	B		P
7440-50-8	Copper	27.30			P
7439-89-6	Iron	14300.00			P
7439-92-1	Lead	29.20		*	F
7439-95-4	Magnesium	4090.00			P
7439-96-5	Manganese	390.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	13.90			P
7440-09-7	Potassium	1380.00			P
7782-49-2	Selenium	1.40		*	F
7440-22-4	Silver	0.97	U		P
7440-23-5	Sodium	296.00	B	E	P
7440-28-0	Thallium	0.88	B		F
7440-62-2	Vanadium	32.10			P
7440-66-6	Zinc	294.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C009

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9713517.0805

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01830

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-02S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6720.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	8.90		*	F
7440-39-3	Barium	72.60			P
7440-41-7	Beryllium	0.14	U		P
7440-43-9	Cadmium	1.80			P
7440-70-2	Calcium	6280.00		*	P
7440-47-3	Chromium	15.10			P
7440-48-4	Cobalt	6.90	B		P
7440-50-8	Copper	19.70			P
7439-89-6	Iron	14100.00			P
7439-92-1	Lead	27.50		*	F
7439-95-4	Magnesium	3940.00			P
7439-96-5	Manganese	455.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	12.40			P
7440-09-7	Potassium	1360.00			P
7782-49-2	Selenium	0.85	B	*	F
7440-22-4	Silver	0.96	U		P
7440-23-5	Sodium	404.00	B	E	P
7440-28-0	Thallium	0.51	B		F
7440-62-2	Vanadium	35.00			P
7440-66-6	Zinc	220.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

0010

9713517.0806

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01831

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-03S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7630.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	5.00		*	F
7440-39-3	Barium	88.70			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	4.80			P
7440-70-2	Calcium	9470.00		*	P
7440-47-3	Chromium	19.70			P
7440-48-4	Cobalt	5.90	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	14100.00			P
7439-92-1	Lead	34.30		*	F
7439-95-4	Magnesium	3970.00			P
7439-96-5	Manganese	413.00			P
7439-97-6	Mercury	0.15		N	CV
7440-02-0	Nickel	14.90			P
7440-09-7	Potassium	1140.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	1.10	B		P
7440-23-5	Sodium	258.00	B	E	P
7440-28-0	Thallium	0.55	B		F
7440-62-2	Vanadium	29.30			P
7440-66-6	Zinc	334.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C011

9213517.0807

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01832

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-04S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	732.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	2.30		S*	F
7440-39-3	Barium	54.20			P
7440-41-7	Beryllium	0.14	U		P
7440-43-9	Cadmium	6.20			P
7440-70-2	Calcium	11000.00		*	P
7440-47-3	Chromium	1.30	B		P
7440-48-4	Cobalt	1.50	B		P
7440-50-8	Copper	13.10			P
7439-89-6	Iron	1440.00			P
7439-92-1	Lead	5.80		*	F
7439-95-4	Magnesium	2690.00			P
7439-96-5	Manganese	508.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	3.30	B		P
7440-09-7	Potassium	15800.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	0.98	U		P
7440-23-5	Sodium	8200.00		E	P
7440-28-0	Thallium	0.96	B		F
7440-62-2	Vanadium	2.30	B		P
7440-66-6	Zinc	177.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
FERNS

0012

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01833

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-05S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2650.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	3.10		*	F
7440-39-3	Barium	73.30			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	6.50			P
7440-70-2	Calcium	8920.00		*	P
7440-47-3	Chromium	4.80			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	18.50			P
7439-89-6	Iron	4620.00			P
7439-92-1	Lead	20.70		*	F
7439-95-4	Magnesium	3290.00			P
7439-96-5	Manganese	553.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	9.00			P
7440-09-7	Potassium	10100.00			P
7782-49-2	Selenium	0.79	U	W*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	5130.00		E	P
7440-28-0	Thallium	1.00	B		F
7440-62-2	Vanadium	8.30	B		P
7440-66-6	Zinc	225.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

9713517.0809

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01834

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-06S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 94.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5060.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	5.30		*	F
7440-39-3	Barium	87.30			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	5.70			P
7440-70-2	Calcium	8230.00		*	P
7440-47-3	Chromium	8.30			P
7440-48-4	Cobalt	5.00	B		P
7440-50-8	Copper	23.10			P
7439-89-6	Iron	9010.00			P
7439-92-1	Lead	15.70		*	F
7439-95-4	Magnesium	3890.00			P
7439-96-5	Manganese	621.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	11.20			P
7440-09-7	Potassium	8820.00			P
7782-49-2	Selenium	1.20		S*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4310.00		E	P
7440-28-0	Thallium	0.99	B		F
7440-62-2	Vanadium	18.00			P
7440-66-6	Zinc	256.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C014

9213517.0810

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01835

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-07S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3010.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	6.30		S*	F
7440-39-3	Barium	72.60			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	6.10			P
7440-70-2	Calcium	8190.00		*	P
7440-47-3	Chromium	6.60			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	20.10			P
7439-89-6	Iron	5480.00			P
7439-92-1	Lead	17.20		*	F
7439-95-4	Magnesium	3360.00			P
7439-96-5	Manganese	545.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	7.50	B		P
7440-09-7	Potassium	11000.00			P
7782-49-2	Selenium	1.40		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4890.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	10.10	B		P
7440-66-6	Zinc	239.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0015

9713517.0811

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01836

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-08S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3460.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.30		*	F
7440-39-3	Barium	80.80			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	6.20			P
7440-70-2	Calcium	9070.00		*	P
7440-47-3	Chromium	6.30			P
7440-48-4	Cobalt	2.80	B		P
7440-50-8	Copper	22.00			P
7439-89-6	Iron	6050.00			P
7439-92-1	Lead	22.10		*	F
7439-95-4	Magnesium	3500.00			P
7439-96-5	Manganese	568.00			P
7439-97-6	Mercury	0.16		N	CV
7440-02-0	Nickel	8.20	B		P
7440-09-7	Potassium	9760.00			P
7782-49-2	Selenium	1.00	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4580.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	11.30			P
7440-66-6	Zinc	269.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C016

9713517.0812

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01837

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-09S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4880.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.60		S*	F
7440-39-3	Barium	89.20			P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	6.30			P
7440-70-2	Calcium	8840.00		*	P
7440-47-3	Chromium	8.40			P
7440-48-4	Cobalt	4.30	B		P
7440-50-8	Copper	25.90			P
7439-89-6	Iron	8150.00			P
7439-92-1	Lead	20.60		*	F
7439-95-4	Magnesium	3900.00			P
7439-96-5	Manganese	560.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	11.00			P
7440-09-7	Potassium	8740.00			P
7782-49-2	Selenium	1.10		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4100.00		E	P
7440-28-0	Thallium	1.00	B		F
7440-62-2	Vanadium	15.40			P
7440-66-6	Zinc	288.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C017

9713517.0913

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01838

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-10S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2870.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	4.60		*	F
7440-39-3	Barium	72.90			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	8.30			P
7440-70-2	Calcium	9810.00		*	P
7440-47-3	Chromium	5.50			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	20.60			P
7439-89-6	Iron	4790.00			P
7439-92-1	Lead	16.30		*	F
7439-95-4	Magnesium	3400.00			P
7439-96-5	Manganese	630.00			P
7439-97-6	Mercury	0.10		N	CV
7440-02-0	Nickel	12.70			P
7440-09-7	Potassium	12800.00			P
7782-49-2	Selenium	1.50		M*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	6770.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	8.70	B		P
7440-66-6	Zinc	262.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C018

9713517.0814

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01839

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-11S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3410.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	4.10		*	F
7440-39-3	Barium	73.50			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	7.80			P
7440-70-2	Calcium	9920.00		*	P
7440-47-3	Chromium	5.30			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	21.60			P
7439-89-6	Iron	5710.00			P
7439-92-1	Lead	17.00		*	F
7439-95-4	Magnesium	3670.00			P
7439-96-5	Manganese	577.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	9.30			P
7440-09-7	Potassium	12300.00			P
7782-49-2	Selenium	1.20		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	6230.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	10.40	B		P
7440-66-6	Zinc	272.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C019

9713517.0815

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01840

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-12S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4270.00			P
7440-36-0	Antimony	3.60	U	N	P
7440-38-2	Arsenic	4.20		*	F
7440-39-3	Barium	108.00			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	8.90			P
7440-70-2	Calcium	9960.00		*	P
7440-47-3	Chromium	9.20			P
7440-48-4	Cobalt	4.20	B		P
7440-50-8	Copper	27.00			P
7439-89-6	Iron	7430.00			P
7439-92-1	Lead	11.90		*	F
7439-95-4	Magnesium	4190.00			P
7439-96-5	Manganese	770.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	11.30			P
7440-09-7	Potassium	9880.00			P
7782-49-2	Selenium	0.84	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4500.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	12.50			P
7440-66-6	Zinc	331.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C020

9713517.0816

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01841

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-13S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5880.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.70		*	F
7440-39-3	Barium	110.00			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	7.80			P
7440-70-2	Calcium	8170.00		*	P
7440-47-3	Chromium	12.10			P
7440-48-4	Cobalt	5.40	B		P
7440-50-8	Copper	29.10			P
7439-89-6	Iron	10000.00			P
7439-92-1	Lead	15.10		*	F
7439-95-4	Magnesium	4600.00			P
7439-96-5	Manganese	724.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	14.50			P
7440-09-7	Potassium	8450.00			P
7782-49-2	Selenium	0.94	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	3550.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	18.40			P
7440-66-6	Zinc	327.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0021

9213517.0817

TMA/Skinner & Sherman Labs **SAMPLE LOG-IN**

WORKORDER SZ-07-165 CLIENT HANFORD-NOR No. SAMPLES:

PROTCL CLP TURNARND 33 days 19 (Soil) (Water) (Specify Other)

COOLER TEMP: 20 oC, or NA

CUSTODIAN Benney, A. SDG/BATCH N/A

CUSTODY SEAL: PRESENT/ABSENT/INTACT/NOT CLIENT CASE NZ-07-079

SHIPER & # Fedex #2523031203 PO/CONTRACT# ✓

TAGS: PRESENT/ABSENT/NA/SEE COC CONTACT Delores Sanchez

CHAIN OF CUSTODY: PRESENT/ABSENT/NA, # N/A COMMENTS: NONE

SAMPLE CONTAINERS INTACT/BROKEN COMMENTS NONE

CLIENT COMMENT? YES/NO

SAMPLE LABELS AGREE WITH CHAIN OF CUSTODY INFO? YES/NO (COMMENT)

CLIENT PAPERWORK AGREES WITH SAMPLES & COC? YES /NO (COMMENT)

SHIPMENT DATES 7/21/92

LIST ANY DATE WITH PAPERWORK/SHIPMENT PROBLEMS & SPECIFY THE PROBLEM:

Samples received @ 20°C

	CLIENT ID	MATRIX	RECEIVED	PH*	TEST(S) & QC	HOLD TIME UP
1	B01829	soil	07.21.92	N/A	TM	HG due 7.22.92
2	30					
3	31					
4	32					
5	33					
6	34					
7	35					
8	36					
9	37					
10	38					
11	39					
12	40					
13	41					
14	B01771					
15	72					
16	73					
17	74					
18	75					
19	76					
20						
21						
22						
23						
24						
25						
26						
27						

Samples are from site known to have Rad-Contamination: YES ✗ NO ____

Samples have detectable amounts of Radioactive Material: YES ____ NO ✗

SUBCONTRACT: YES/NO, TO: _____ DATE: _____

REVIEWED _____

* EPA/CLP required Rev 1.6 PAGE:

Westinghouse Hanford Company 9213517.0818

CHAIN OF CUSTODY

S&S

Custody Form Initiator R.P. Mueller

Company Contact PNL C.A. Brandt

Telephone 372-1344

Project Designation/Sampling Locations "300-FF-5 Area Biota"

Collection Date 6-24, 6-26, 1992

Ice Chest No. NA

Field Logbook No. BNW-54497

Bill of Lading/Airbill No. 248521768

Offsite Property No. PNL 92-1053

Method of Shipment Emery Overnight

Shipped to JMA/NORCAL

Possible Sample Hazards/Remarks < detection - total Activity, GEA analyzed and Cleared

Sample Identification

B01829	periphyton	300 FF-5	B01832	Macrophyte	300-FF-5
B01830			B01833		
B01831			B01834		
B01721			B01835		
B01722			B01836		
B01723			B01837		
B01724			B01838		
B01725			B01839		
B01726			B01840		
			B01841		

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
R.P. Mueller RP. Mueller	Kermit Blum	7-17-92 1130
Relinquished by: 7-20-92 Kermit Blum	Received by: [illegible]	Date/Time: 7/21/92 9:30
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: 250

A-6000-407 (12/90)

9713517.0819

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector R.P. Mueller Date Sampled 6/24, 6/26/92 Time NA hours

Company Contact C.A. Brandt Telephone (509) 372-1344

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B01829	1-glass jar	Dried Periphyton	TAL Metals, Gamma Spec, SR-90
B01830			
B01831			
B01721			
B01722			
B01723			
B01724			
B01725			
B01726			
B01832	1-glass jar	Dried plants	
B01833			
B01834			
B01835			
B01836			
B01837			
B01838			
B01839			
B01840			
B01841			

Field Information** From 300-FF-5 Task 7

Special Handling and/or Storage NA

Possible Sample Hazards None detected

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required 25.4

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

SDG 7058	Client Westinghouse Hanford
Contact Dinkar P. Kharkar	Contract MBH-SVV-069262

CASE NARRATIVE

1.0 GENERAL

Periphyton sample results from Location 300-FF-5 (TMA/Norcal Group 7058) are reported herein. TMA/Norcal Group 7058 is comprised of nineteen samples listed on the Chain-of-Custody documents and are identified as Sample 1 through 19.

1.1 CHAINS-OF-CUSTODY

This report includes data from the samples delivered under Chain-of-Custody documents Field Logbook No. BNW-54497.

1.2 SAMPLE VOLUME

Glass jars of the samples were received for the analyses.

1.3 MISSING SAMPLES

All samples were accounted for in an undamaged condition.

1.4 HOLDING TIMES

The collection was made between 6/24/92 and 6/26/92 and sample processing was initiated within 180 days of collection.

2.0 QUALITY CONTROL

The internal quality control consisted of one sample each of a laboratory control, a blank, and a replicate. All original analyses were performed with QC samples 7058-20, 21, and 22.

The QC samples were prepared and labelled by the quality control officer. Copies of The QC notebook pages are included in the data package.

2.1 LABORATORY CONTROL SAMPLES

LCS recoveries for ^{60}Co, ^{90}Sr, and ^{137}Cs were good, and pass the 3 σ protocol limits. The MDA's for ^{90}Sr was below the RDL requirement.

2.2 BLANKS

The MDA for ^{90}Sr meet the RDL requirements. The gamma scan results were below the MDA.

2.3 REPLICATES

Results were satisfactory for all replicate analyses.

SDG 7058	Client Westinghouse Hanford
Contact Dinkar P. Kharkar	Contract MBH-SVV-069262

CASE NARRATIVE

3.0 ANALYTICAL NOTES

3.4 Strontium-90 Analyses: The average yield for twenty-two analyses was (75 ± 10%). The lowest yield was 59% and the highest was 83%. The average MDA was 0.72 ± 0.22 pCi/g. Positive ^{90}Sr concentration was not found in any of the samples.

3.9 Gamma Scan Analyses: Gamma scan analysis did not find positive concentration of gamma nuclides except ^{60}Co was found in sample number 7058-7 and ^{137}Cs was found in samples numbers 7058-7 and 9. Few samples show presence of ^{40}K, ^{226}Ra, ^{228}Th, and ^{232}Th.

9713517.0822

N207076-04

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B017Z1

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-04
Dept sample id 7058-004
Received 07/17/92

Client sample id B017Z1
Matrix BIOTA
Collected 06/26/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.14	0.25	0.87	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		190		U	GAM
Iron 59		U		89		U	GAM
Chromium 51	14392-02-0	U		370		U	GAM
Cobalt 60	10198-40-0	U		12		U	GAM
Zinc 65	17982-39-3	U		26		U	GAM
Ruthenium 106	13967-48-1	U		100		U	GAM
Cesium 134	17967-70-9	U		14		U	GAM
Cesium 137	10045-97-3	U		10		U	GAM
Europium 152	14683-23-9	U		13		U	GAM
Europium 154	15585-10-1	U		8.4		U	GAM
Radium 226	13982-67-7	U		19		U	GAM
Thorium 228	14274-82-9	U		13		U	GAM
Thorium 232	7440-29-1	U		47		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9715517.0823

N207076-05

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B017Z2

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-05
Dept sample id 7058-005
Received 07/17/92

Client sample id B017Z2
Matrix BIOTA
Collected 06/26/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.28	0.61	0.56	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		20		U	GAM
Iron 59		U		6.1		U	GAM
Chromium 51	14392-02-0	U		36		U	GAM
Cobalt 60	10198-40-0	U		1.2		U	GAM
Zinc 65	17982-39-3	U		2.7		U	GAM
Ruthenium 106	13967-48-1	U		9.0		U	GAM
Cesium 134	17967-70-9	U		1.2		U	GAM
Cesium 137	10045-97-3	U		1.1		U	GAM
Europium 152	14683-23-9	U		1.3		U	GAM
Europium 154	15585-10-1	U		0.93		U	GAM
Radium 226	13982-67-7	2.2	1.8				GAM
Thorium 228	14274-82-9	1.4	1.4				GAM
Thorium 232	7440-29-1	U		4.7		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0824

N207076-06

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B017Z3

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-06	Client sample id	B017Z3
Dept sample id	7058-006	Matrix	BIOTA
Received	07/17/92	Collected	06/26/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.26	0.62	0.60	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		20		U	GAM
Iron 59		U		9.4		U	GAM
Chromium 51	14392-02-0	U		36		U	GAM
Cobalt 60	10198-40-0	U		2.2		U	GAM
Zinc 65	17982-39-3	U		3.4		U	GAM
Ruthenium 106	13967-48-1	U		13		U	GAM
Cesium 134	17967-70-9	U		1.5		U	GAM
Cesium 137	10045-97-3	U		1.4		U	GAM
Europium 152	14683-23-9	U		2.2		U	GAM
Europium 154	15585-10-1	U		1.5		U	GAM
Radium 226	13982-67-7	U		2.4		U	GAM
Thorium 228	14274-82-9	U		2.2		U	GAM
Thorium 232	7440-29-1	U		6.3		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9713517.0825

N207076-07

TMA NORCAL
REPORTING GROUP 7058

DATA SHEET

B017Z4

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-07
Dept sample id 7058-007
Received 07/17/92

Client sample id B017Z4
Matrix BIOTA
Collected 06/26/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.073	0.59	0.61	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	13	5.3				GAM
Iron 59		U		3.5		U	GAM
Chromium 51	14392-02-0	U		16		U	GAM
Cobalt 60	10198-40-0	0.73	0.46				GAM
Zinc 65	17982-39-3	U		1.3		U	GAM
Ruthenium 106	13967-48-1	U		3.3		U	GAM
Cesium 134	17967-70-9	U		0.46		U	GAM
Cesium 137	10045-97-3	0.42	0.29				GAM
Europium 152	14683-23-9	U		0.57		U	GAM
Europium 154	15585-10-1	U		0.37		U	GAM
Radium 226	13982-67-7	1.2	0.74				GAM
Thorium 228	14274-82-9	2.0	0.60				GAM
Thorium 232	7440-29-1	U		2.0		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9213517.0826

N207076-08

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B017Z5

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-08
Dept sample id 7058-008
Received 07/17/92

Client sample id B017Z5
Matrix BIOTA
Collected 06/26/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.24	0.67	0.58	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		49		U	GAM
Iron 59		U		18		U	GAM
Chromium 51	14392-02-0	U		100		U	GAM
Cobalt 60	10198-40-0	U		3.9		U	GAM
Zinc 65	17982-39-3	U		8.4		U	GAM
Ruthenium 106	13967-48-1	U		32		U	GAM
Cesium 134	17967-70-9	U		2.8		U	GAM
Cesium 137	10045-97-3	U		2.4		U	GAM
Europium 152	14683-23-9	U		4.0		U	GAM
Europium 154	15585-10-1	U		2.5		U	GAM
Radium 226	13982-67-7	U		5.4		U	GAM
Thorium 228	14274-82-9	U		4.1		U	GAM
Thorium 232	7440-29-1	U		13		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0827

N207076-09

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B017Z6

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-09	Client sample id	B017Z6
Dept sample id	7058-009	Matrix	BIOTA
Received	07/17/92	Collected	06/26/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.65	0.64	0.54	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	20	9.3				GAM
Iron 59		U		6.6		U	GAM
Chromium 51	14392-02-0	U		31		U	GAM
Cobalt 60	10198-40-0	U		0.89		U	GAM
Zinc 65	17982-39-3	U		2.3		U	GAM
Ruthenium 106	13967-48-1	U		7.4		U	GAM
Cesium 134	17967-70-9	U		1.1		U	GAM
Cesium 137	10045-97-3	0.67	0.57				GAM
Europium 152	14683-23-9	U		1.6		U	GAM
Europium 154	15585-10-1	U		1.0		U	GAM
Radium 226	13982-67-7	U		1.9		U	GAM
Thorium 228	14274-82-9	1.7	0.80				GAM
Thorium 232	7440-29-1	U		4.5		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0828

N207076-01

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01829

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-01	Client sample id	B01829
Dept sample id	7058-001	Matrix	BIOTA
Received	07/17/92	Collected	06/26/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.37	0.66	0.76	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	22	16				GAM
Iron 59		U		8.0		U	GAM
Chromium 51	14392-02-0	U		45		U	GAM
Cobalt 60	10198-40-0	U		1.9		U	GAM
Zinc 65	17982-39-3	U		4.3		U	GAM
Ruthenium 106	13967-48-1	U		14		U	GAM
Cesium 134	17967-70-9	U		2.0		U	GAM
Cesium 137	10045-97-3	U		1.6		U	GAM
Europium 152	14683-23-9	U		1.8		U	GAM
Europium 154	15585-10-1	U		1.2		U	GAM
Radium 226	13982-67-7	U		3.1		U	GAM
Thorium 228	14274-82-9	1.3	1.2				GAM
Thorium 232	7440-29-1	U		6.7		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9713517.0829

N207076-02

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01830

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-02	Client sample id	B01830
Dept sample id	7058-002	Matrix	BIOTA
Received	07/17/92	Collected	06/26/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.25	0.81	0.84	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	22	16				GAM
Iron 59		U		7.9		U	GAM
Chromium 51	14392-02-0	U		37		U	GAM
Cobalt 60	10198-40-0	U		1.7		U	GAM
Zinc 65	17982-39-3	U		3.5		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.2		U	GAM
Cesium 137	10045-97-3	U		1.3		U	GAM
Europium 152	14683-23-9	U		1.6		U	GAM
Europium 154	15585-10-1	U		1.1		U	GAM
Radium 226	13982-67-7	U		2.3		U	GAM
Thorium 228	14274-82-9	2.4	1.5				GAM
Thorium 232	7440-29-1	U		5.8		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0850

N207076-03

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01831

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-03	Client sample id	B01831
Dept sample id	7058-003	Matrix	BIOTA
Received	07/17/92	Collected	06/26/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.38	0.63	0.73	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		58		U	GAM
Iron 59		U		27		U	GAM
Chromium 51	14392-02-0	U		110		U	GAM
Cobalt 60	10198-40-0	U		4.7		U	GAM
Zinc 65	17982-39-3	U		8.4		U	GAM
Ruthenium 106	13967-48-1	U		32		U	GAM
Cesium 134	17967-70-9	U		4.5		U	GAM
Cesium 137	10045-97-3	U		3.2		U	GAM
Europium 152	14683-23-9	U		4.1		U	GAM
Europium 154	15585-10-1	U		2.7		U	GAM
Radium 226	13982-67-7	U		6.2		U	GAM
Thorium 228	14274-82-9	U		4.4		U	GAM
Thorium 232	7440-29-1	U		16		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0851

N207076-10

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01832

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-10	Client sample id	B01832
Dept sample id	7058-010	Matrix	BIOTA
Received	07/17/92	Collected	06/24/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.070	0.53	0.64	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		29		U	GAM
Iron 59		U		16		U	GAM
Chromium 51	14392-02-0	U		61		U	GAM
Cobalt 60	10198-40-0	U		2.3		U	GAM
Zinc 65	17982-39-3	U		5.2		U	GAM
Ruthenium 106	13967-48-1	U		14		U	GAM
Cesium 134	17967-70-9	U		1.5		U	GAM
Cesium 137	10045-97-3	U		2.0		U	GAM
Europium 152	14683-23-9	U		2.2		U	GAM
Europium 154	15585-10-1	U		1.5		U	GAM
Radium 226	13982-67-7	U		3.4		U	GAM
Thorium 228	14274-82-9	U		2.0		U	GAM
Thorium 232	7440-29-1	U		7.5		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0852

N207076-11

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01833

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-11	Client sample id	B01833
Dept sample id	7058-011	Matrix	BIOTA
Received	07/17/92	Collected	06/24/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.58	0.77	0.67	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	24	19				GAM
Iron 59		U		13		U	GAM
Chromium 51	14392-02-0	U		63		U	GAM
Cobalt 60	10198-40-0	U		2.1		U	GAM
Zinc 65	17982-39-3	U		4.0		U	GAM
Ruthenium 106	13967-48-1	U		17		U	GAM
Cesium 134	17967-70-9	U		2.1		U	GAM
Cesium 137	10045-97-3	U		2.1		U	GAM
Europium 152	14683-23-9	U		2.1		U	GAM
Europium 154	15585-10-1	U		1.4		U	GAM
Radium 226	13982-67-7	U		2.6		U	GAM
Thorium 228	14274-82-9	U		2.2		U	GAM
Thorium 232	7440-29-1	U		7.1		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0853

N207076-12

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01834

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-12
Dept sample id 7058-012
Received 07/17/92

Client sample id B01834
Matrix BIOTA
Collected 06/24/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.081	0.19	0.61	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	16	9.0				GAM
Iron 59		U		8.5		U	GAM
Chromium 51	14392-02-0	U		32		U	GAM
Cobalt 60	10198-40-0	U		1.2		U	GAM
Zinc 65	17982-39-3	U		2.2		U	GAM
Ruthenium 106	13967-48-1	U		7.5		U	GAM
Cesium 134	17967-70-9	U		0.89		U	GAM
Cesium 137	10045-97-3	U		0.85		U	GAM
Europium 152	14683-23-9	U		1.4		U	GAM
Europium 154	15585-10-1	U		0.90		U	GAM
Radium 226	13982-67-7	U		1.7		U	GAM
Thorium 228	14274-82-9	U		1.5		U	GAM
Thorium 232	7440-29-1	U		3.9		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0834

N207076-13

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01835

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-13
Dept sample id 7058-013
Received 07/17/92

Client sample id B01835
Matrix BIOTA
Collected 06/24/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.017	0.21	0.73	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		26		U	GAM
Iron 59		U		7.8		U	GAM
Chromium 51	14392-02-0	U		43		U	GAM
Cobalt 60	10198-40-0	U		1.7		U	GAM
Zinc 65	17982-39-3	U		3.5		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.4		U	GAM
Cesium 137	10045-97-3	U		1.4		U	GAM
Europium 152	14683-23-9	U		1.7		U	GAM
Europium 154	15585-10-1	U		1.1		U	GAM
Radium 226	13982-67-7	U		2.2		U	GAM
Thorium 228	14274-82-9	U		1.8		U	GAM
Thorium 232	7440-29-1	U		5.8		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0835

N207076-14

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01836

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-14	Client sample id	B01836
Dept sample id	7058-014	Matrix	BIOTA
Received	07/17/92	Collected	06/24/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.95	0.80	0.73	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	U		19		U	GAM
Iron 59		U		9.2		U	GAM
Chromium 51	14392-02-0	U		49		U	GAM
Cobalt 60	10198-40-0	U		2.1		U	GAM
Zinc 65	17982-39-3	U		3.4		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.6		U	GAM
Cesium 137	10045-97-3	U		1.3		U	GAM
Europium 152	14683-23-9	U		2.1		U	GAM
Europium 154	15585-10-1	U		1.3		U	GAM
Radium 226	13982-67-7	U		2.5		U	GAM
Thorium 228	14274-82-9	U		2.2		U	GAM
Thorium 232	7440-29-1	3.4	3.0				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9713517.0856

N207076-15

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01837

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-15
Dept sample id 7058-015
Received 07/17/92

Client sample id B01837
Matrix BIOTA
Collected 06/24/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.10	0.22	0.76	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	16	15				GAM
Iron 59		U		7.1		U	GAM
Chromium 51	14392-02-0	U		44		U	GAM
Cobalt 60	10198-40-0	U		1.5		U	GAM
Zinc 65	17982-39-3	U		2.3		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.2		U	GAM
Cesium 137	10045-97-3	U		1.2		U	GAM
Europium 152	14683-23-9	U		1.5		U	GAM
Europium 154	15585-10-1	U		0.96		U	GAM
Radium 226	13982-67-7	U		2.7		U	GAM
Thorium 228	14274-82-9	U		1.6		U	GAM
Thorium 232	7440-29-1	U		4.8		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9213517.0857

N207076-16

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01838

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-16
Dept sample id 7058-016
Received 07/17/92

Client sample id B01838
Matrix BIOTA
Collected 06/24/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-1.1	3.0	0.95	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	17	13				GAM
Iron 59		U		12		U	GAM
Chromium 51	14392-02-0	U		46		U	GAM
Cobalt 60	10198-40-0	U		1.7		U	GAM
Zinc 65	17982-39-3	U		3.7		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.4		U	GAM
Cesium 137	10045-97-3	U		1.3		U	GAM
Europium 152	14683-23-9	U		1.6		U	GAM
Europium 154	15585-10-1	U		1.1		U	GAM
Radium 226	13982-67-7	U		2.3		U	GAM
Thorium 228	14274-82-9	U		1.8		U	GAM
Thorium 232	7440-29-1	U		5.1		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0838

N207076-17

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01839

SDG 7058
Contact Dinkar Kharkar

Client Westinghouse Hanford
Contract MBH-SVV-069262

Lab sample id N207076-17
Dept sample id 7058-017
Received 07/17/92

Client sample id B01839
Matrix BIOTA
Collected 06/24/92
Chain of custody id BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.91	2.2	0.75	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	16	14				GAM
Iron 59		U		15		U	GAM
Chromium 51	14392-02-0	U		60		U	GAM
Cobalt 60	10198-40-0	U		2.0		U	GAM
Zinc 65	17982-39-3	U		4.2		U	GAM
Ruthenium 106	13967-48-1	U		14		U	GAM
Cesium 134	17967-70-9	U		1.8		U	GAM
Cesium 137	10045-97-3	U		1.7		U	GAM
Europium 152	14683-23-9	U		1.9		U	GAM
Europium 154	15585-10-1	U		1.2		U	GAM
Radium 226	13982-67-7	U		2.7		U	GAM
Thorium 228	14274-82-9	U		1.8		U	GAM
Thorium 232	7440-29-1	U		6.6		U	GAM

Lab id TMAN
Protocol WHC-HEIS
Version Ver 1.0
Form DVD-DS
Version 2.16
Report date 09/18/92

9713517.0839

N207076-18

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01840

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-18	Client sample id	B01840
Dept sample id	7058-018	Matrix	BIOTA
Received	07/17/92	Collected	06/24/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	0.052	0.22	0.73	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	14	13				GAM
Iron 59		U		16		U	GAM
Chromium 51	14392-02-0	U		63		U	GAM
Cobalt 60	10198-40-0	U		1.9		U	GAM
Zinc 65	17982-39-3	U		3.9		U	GAM
Ruthenium 106	13967-48-1	U		12		U	GAM
Cesium 134	17967-70-9	U		1.5		U	GAM
Cesium 137	10045-97-3	U		1.6		U	GAM
Europium 152	14683-23-9	U		1.8		U	GAM
Europium 154	15585-10-1	U		1.3		U	GAM
Radium 226	13982-67-7	U		2.8		U	GAM
Thorium 228	14274-82-9	U		1.9		U	GAM
Thorium 232	7440-29-1	U		6.3		U	GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

9213517.0840

N207076-19

TMA NORCAL

REPORTING GROUP 7058

DATA SHEET

B01841

SDG	7058	Client	Westinghouse Hanford
Contact	Dinkar Kharkar	Contract	MBH-SVV-069262
Lab sample id	N207076-19	Client sample id	B01841
Dept sample id	7058-019	Matrix	BIOTA
Received	07/17/92	Collected	06/24/92
		Chain of custody id	BNW-54497

PARAMETER	CAS NO	RESULT pCi/G	2σ ERR (COUNT)	MDA pCi/G	RDL pCi/G	QUALI-FIERS	TEST
Strontium 90	10098-97-2	-0.33	0.66	0.77	2.0	U	Y
GAMMA SCAN ANALYTES							
Potassium 40	13966-00-2	24	12				GAM
Iron 59		U		8.1		U	GAM
Chromium 51	14392-02-0	U		45		U	GAM
Cobalt 60	10198-40-0	U		1.6		U	GAM
Zinc 65	17982-39-3	U		3.4		U	GAM
Ruthenium 106	13967-48-1	U		13		U	GAM
Cesium 134	17967-70-9	U		1.2		U	GAM
Cesium 137	10045-97-3	U		1.0		U	GAM
Europium 152	14683-23-9	U		1.4		U	GAM
Europium 154	15585-10-1	U		0.97		U	GAM
Radium 226	13982-67-7	U		2.4		U	GAM
Thorium 228	14274-82-9	1.7	1.7				GAM
Thorium 232	7440-29-1	4.6	3.5				GAM

Lab id	TMAN
Protocol	WHC-HEIS
Version	Ver 1.0
Form	DVD-DS
Version	2.16
Report date	09/18/92

Westinghouse Hanford Company 9213517.0841

CHAIN OF CUSTODY

Custody Form Initiator R.P. Mueller

Company Contact PNL C.A. Brandt

Telephone 372-1344

Project Designation/Sampling Locations "300-FF-5 Area Biota"

Collection Date 6-24, 6-26, 1992

Ice Chest No. NA

Field Logbook No. BNW-54497

Bill of Lading/Airbill No. 248521768

Offsite Property No. PNL 92-1053

Method of Shipment Emery Overnight

Shipped to TMA/NORCAL

Possible Sample Hazards/Remarks < detection - total Activity, GEA analyzed and Cleared

Sample Identification

B01829	periphyton	300 FF-5	B01832	Macrophyte	300-FF-5
B01830			B01833		
B01831			B01834		
B01721			B01835		
B01722			B01836		
B01723			B01837		
B01724			B01838		
B01725			B01839		
B01726			B01840		
			B01841		

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
R.P. Mueller RP. Mueller	Kermit Blum	7-17-92 1130
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90)

9213517.0842

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector R.P. Mueller Date Sampled 6/24, 6/26/92 Time NA hours

Company Contact C.A. Brandt Telephone (509) 372-1344

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B01829	1-glass jar	Dried periphyton	TAL Metals, Gamma Spec, SR-90
B01830			
B01831			
B01721			
B01722			
B01723			
B01724			
B01725			
B01726			
B01832	1-glass jar	Dried plants	
B01833			
B01834			
B01835			
B01836			
B01837			
B01838			
B01839			
B01840			
B01841			

Field Information** From 300-FF-5 Task 7

Special Handling and/or Storage NA

Possible Sample Hazards None detected

PART II: LABORATORY SECTION

Received by Kermit Blum Title Sample Control Supervisor Date 7-20-92

Analysis Required

*Indicate whether sample is soil, sludge, water, etc.

**Use back of page for additional information relative to sample location.

A-6000-406 (05/90)

9213517.0943

CONTRACTOR	OFF – SITE PROPERTY CONTROL	SERIAL NUMBER (TO BE OBTAINED FROM PROPERTY ACCOUNTING)
PNL		PNL 92-1053

PART I – TO BE COMPLETED BY ORIGINATOR

DEPARTMENT	SECTION	UNIT
Environmental Sciences Dept.	Ecol. Resources & Assessment	Applied Ecology

THE FOLLOWING ITEMS ARE TO BE SHIPPED FROM: [X] CONTRACTOR [ ] VENDOR

ROUTING: Emery Next Day Air [X] PREPAID [ ] COLLECT

SHIPPED TO:
TMA NORCAL
2030 Wright Avenue
Richmond CA 94804 Attn: Robert Fox

OFFSITE CUSTODIAN: Robert Fox
FULL TITLE: Project Coordinator

QUANTITY	DESCRIPTION (INCLUDE SERIAL AND H.E.W. NO'S.)	ORIGINAL COST
1	Cardboard box, contains plant samples that are double-bagged - packed in styrofoam. Samples are non-hazardous. See attached sheet for sample numbers. 12 lbs	NA

[ ] CLASSIFIED [X] UNCLASSIFIED [ ] SHIPPED UNDER DOE CONTRACT [ ] SHIPPED UNDER CONTRACTOR'S USE PERMIT CONTRACT

NECESSITY FOR THE OFF-SITE USE OF THIS PROPERTY:
To support 300-F-5 - Task 7.

Bill of Lading No 248521768

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO ROCKWELL HANFORD OPERATIONS SHIPPING.

RM CLEARANCE FOR PUBLIC RELEASE	RM SURVEY NO.	DATE
June A. Blanson	000798	7-16-92

LOCATION OF PROPERTY (AREA & BLDG.)	CONTACT	PHONE
3000 Area	BJ Fulows	375-2247

DATE READY FOR SHIPMENT	COST CODE TO BE CHARGED	APPROXIMATE DATE THIS PROPERTY WILL BE RETURNED
July — 1992	D7D83/PE 2FA	

ORIGINATED BY	RELINQUISHED BY:	DATE	AUTHORIZED BY	DATE
RP Mueller	RP Mueller		HE Westergahl	7/15/92

SIGNATURE AND NAME OF PROPERTY CONTROL	CUSTODIAN DATE	PROPERTY MANAGEMENT APPROVAL	DATE

PART II – TO BE COMPLETED BY ROCKWELL SHIPPING OPERATION

SIGNATURE OF ROCKWELL RECIPIENT	RETURN ORDER NO.	DATE ISSUED	PURCHASE ORDER NO.	DATE ISSUED
DATE 7-16-92				

DISTRIBUTION

BY ORIGINATOR:
WHITE, GREEN, YELLOW, PINK – PROPERTY MANAGEMENT
GOLDENROD – RETAIN

ROCKWELL SHIPPING OPERATION - SIGN ALL COPIES AND FORWARD TO:
WHITE – PROPERTY MANAGEMENT
GREEN – PROPERTY CONTROL CUSTODIAN (ISSUING OFFICE)
YELLOW – RETAIN
PINK – ORIGINATOR

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

Bill to Shipper ☐ Bill to Consignee ☐ Third Party Billing ☐

EMERY WORLDWIDE

A CF Company

SERVICES

UNITED STATES / CANADA: Same Day ☐ AM ☒ PM ☐ Second Day ☐ Saturday Delivery ☐

INTERNATIONAL: Express ☐ Preferred ☐ Standard ☐ Business Documents ☐ Customs Clearance ☐ Delivery ☐

Shipper's Account Number: E 850282294

Date: 07-16-92 | Origin: PSC | Shipment Number: 248521768 0

From:
WESTINGHOUSE SHIPPING DEPT (509) 376-6665
U.S. DEPARTMENT OF ENERGY C/O
BATTELLE NORTHWEST
BLDG 1163
2355 STEVENS DRIVE
RICHLAND WA
Canada ☐

To:
ROBERT FOX
TMA NORCAL
2030 WRIGHT AVENUE
RICHMOND CA
Canada ☐
Hold for Pick Up ☐

Tariff Dest. | Gateway

Check to Shipper $

EMERY WORLDWIDE will accept Consignee's check with all risks being assumed by Shipper, including but not limited to non-payment, fraud and misrepresentation.

Customer's Reference Numbers: 97D83 PC2FA PNL 92-1053

Zip: 99352

Consignee's Account Number: E

Zip: 94804

Description	Pcs.	L	W	H	Total Pieces	Total Weight (In Lbs.)
1 F/b CTN SAMPLES PNL 92-1053	1		16	17	1	12

FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)

Declared Value $

248521768 0

Remarks: OVERNIGHT DELIVERY

Shipper's Signature X

Zip Ship ☐

For shipments within the 50 United States Shipper has the option to check this box and, by checking, agrees that the Zip Ship conditions, described in the area to the right, apply.

Mark if Emery Packaging is used

Urgent Letter 9X12 ☒ | Urgent Pack 12X15 ☒

International Shipments: Free Domicile ☐

Commodity Code

Third Party Account Number mandatory for Third Party Billing. E

Third Party Account Number

Base Charge

International Customs Value

International Insurance

Total Transportation Charges

Other Charges/Advance at Origin ☐ OC/AO- $

Terms and Conditions on Back

1-OAK-A

9713517.0845

VALIDATION SUMMARY

9213517.0846

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: Westinghouse Hanford	REVIEWER: G. Dool	DATE: 11-5-92
LABORATORY: TMA/Skinner + Sherman	CASE: N2-07-079	SDG: ~~B01721~~
SAMPLE/MATRIX: 1a - Soil		B01721
(Attachment: pages B1 to B8)		
Analysis performed per SOW NO 3/90		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	☑	☐	☐
Cover Page	☑	☐	☐
Traffic Reports	☑	☐	☐
Sample Data			
Inorganic Analysis Data Sheets	☑	☐	☐
Standards Data			
Initial and Continuing Calibration Verification	☑	☐	☐
CRDL Standard for AA and ICP	☑	☐	☐
QC Summary			
Blanks	☑	☐	☐
ICP Interference Check Summary	☑	☐	☐
Spike Sample Recovery	☑	☐	☐
Post-Digestion Spike Sample Recovery	☑	☐	☐
Duplicate	☑	☐	☐
Laboratory Control Sample	☑	☐	☐
Standard Addition Results	☑	☐	☐
ICP Serial Dilutions	☑	☐	☐
Instrument Detection Limits	☑	☐	☐
ICP Interelement Correction Factors	☑	☐	☐
ICP Linear Ranges	☑	☐	☐
Preparation Log	☑	☐	☐
Analysis Run Log	☑	☐	☐
Raw Data			
ICP Raw Data	☑	☐	☐
Furnace AA Raw Data	☑	☐	☐
Mercury Raw Data	☑	☐	☐
Cyanide Raw Data	☐	☐	☑
Additional Data			
Internal laboratory chain-of-custody	☑	☐	☐
Laboratory Sample Preparation Records	☑	☐	☐

Data Package Item	Present?:	Yes	No	N/A
Percent Solids Analysis Records		☑	☐	☐
Reduction Formulae		☑	☐	☐
Instrument Run Logs		☑	☐	☐
Chemist notebook pages		☑	☐	☐

2. HOLDING TIMES (Form B-1)

Have all samples been analyzed within holding times?	(Yes)	No	N/A

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for\ detects and UJ for nondetects).

3. INITIAL CALIBRATIONS (Form B-2)

Were all instruments calibrated daily, each set-up time and was the proper number of standards used?	(Yes)	No	N/A
Are the correlation coefficients ≥0.995?	(Yes)	No	N/A
Was a midrange cyanide standard distilled?	Yes	No	(N/A)

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results >IDL as estimated (J) and results <IDL as estimated (UJ), if the correlation coefficient is <0.0995 or the laboratory did not distill the midrange cyanide standard.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION (Form B-2)

Are ICV and CCV percent recoveries within control limits?	(Yes)	No	N/A
Are there calculation errors?	Yes	(No)	N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

5. ICP INTERFERENCE CHECK SAMPLE (Form B-2)

Has an ICS sample been analyzed at the proper frequency?	(Yes)	No	N/A
Are the AB solution %R values within control?	(Yes)	No	N/A
Are there calculation errors?	Yes	(No)	N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS (Form B-3)

Are target compounds present in the blanks? Yes (No) N/A

ACTION: Qualify all associated positive results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS (Form B-3)

Are target analytes present in the field blanks? Yes No (N/A)

ACTION: Qualify all sample results for any analyte <5 times the amount in any field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS (Form B-4)

Are spike recoveries within the control limits? Yes (No) N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is >125% and sample results are <IDL no qualification is required. If spike recovery is >125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is <30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE (Form B-4)

Are percent recoveries within the acceptance limits? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or >120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results >IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

10. PERFORMANCE AUDIT ANALYSIS

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample analysis in the data validation narrative.

11. DUPLICATE SAMPLE ANALYSIS (Form B-5)

Are RPD values acceptable? Yes No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

12. ICP SERIAL DILUTION (Form B-6)

Are the serial dilution results acceptable? Yes No N/A

Is there evidence of negative interference? Yes No N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgement to qualify the data.

13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

15/16. FURNACE ATOMIC ABSORPTION QUALITY CONTROL (Form B-6)

Do all applicable analyses have duplicate injections? Yes No N/A

Are applicable duplicate injection RSD values within control limits? Yes No N/A

If no, were samples rerun once as required? Yes No N/A

Does the RSD for the rerun fall within the control limits? Yes No N/A

Were analytical spike recoveries within the control limits? Yes No N/A

If no, were MSA analyses performed when required?	Yes	No	N/A
Are MSA correlation coefficients ≥0.995?	Yes	No	N/A
If no, was a second MSA analysis performed?	Yes	No	N/A

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is <40% qualify detects as estimated (J). If the analytical spike recovery is ≥10% but <40%, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is <10%, reject all nondetects (R). If the sample absorbance is <50% of the analytical spike absorbance and the analytical spike recovery is <85% or >115%, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correlation coefficient was <0.995, qualify the associated detected results as estimated (J).

17. ANALYTE QUANTITATION AND DETECTION LIMITS (Form B-6)

Have results been reported and calculated correctly?	Yes	No	N/A
Are results within the calibration range of the instruments and within the linear range of the ICP?	Yes	No	N/A
Are all detection limits below the CRQL?	Yes	No	N/A

ACTION: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

18. OVERALL ASSESSMENT AND SUMMARY (Form B-7)

Have the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary): The data is useable with data validation qualifiers listed on page B-7. Data quality is excellent with some ~~mis~~ minor deficiencies ~~qualifications~~ listed on page B-6.

- The matrix spike and duplicate analysis performed at a frequency of 5%.
- All the required CLP forms and applicable raw data was included in the data package.

Case # 92-07-079

HOLDING TIME SUMMARY - FORM B-1

~~SDG~~:	REVIEWER: G. Deal	DATE: 11-5-92	PAGE 1 OF 8
COMMENTS: Duplicate analysis on sample # B01829 and spike analysis on B01830			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED ▲	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
~~B017Z6~~ B017			*8/19/92 (P)	CV - 7/22/92 P - 8/20/92	P+F CV 56, 27	P F CV 1 11+18 1	none
B017Z1	CLP-Metals	6/24 + 6/26/92				" " " "	
B017Z2						" " " "	
B017Z3						" " " "	
B017Z4						" " " "	
B017Z5						" " " "	
B017Z6						" " " "	
B01829						" " " "	
B01830						" " " "	
B01831						" " " "	
B01832						" " " "	
B01833						" " " "	
B01834						" " " "	
B01835						" " " "	
B01836						" " " "	
B01837						" " " "	
B01838						" " " "	
B01839						" " " "	
B01840						" " " "	
B01841						" " " "	

* CV Preparation - 7/21/92

▲ As & Se - 9/8 + 9/9/92

2980/1992/6

9713517.0853

APPENDIX A1E
DATA VALIDATION DOCUMENTATION

Additional Biota Metals Analyses

Thermo Analytical Laboratories

Case Number N2-07-079

9713517.0854

ATTACHMENT 1

Glossary of Data Qualifiers

U - Indicates that the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates that the compound or analyte was analyzed for and not detected. Due to quality control deficiencies identified during data validation the value may not accurately the sample quantitation limit.

J - Indicates that the compound or analyte was analyzed for and detected. The associated value is estimated but the data are useable for decision making processes.

R - Indicates that the compound or analyte was analyzed for and due to an identified quality control deficiency the data was unusable.

NJ - Indicates presumptive evidence of a compound at an estimated value.

N - Indicates presumptive evidence of a compound.

9713517.0855

ATTACHMENT 2

As Received Laboratory Sample Concentration Reports

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B017Z1
~~B017ET~~
B017Z1

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-14S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6760.00			P
7440-36-0	Antimony	4.40	B	N	P
7440-38-2	Arsenic	6.80		*	F
7440-39-3	Barium	83.00			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	5.10			P
7440-70-2	Calcium	5820.00		*	P
7440-47-3	Chromium	18.10			P
7440-48-4	Cobalt	5.60	B		P
7440-50-8	Copper	29.80			P
7439-89-6	Iron	11800.00			P
7439-92-1	Lead	38.90		*	F
7439-95-4	Magnesium	3930.00			P
7439-96-5	Manganese	419.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	14.20			P
7440-09-7	Potassium	1470.00			P
7782-49-2	Selenium	0.74	U	W*	F
7440-22-4	Silver	1.00	B		P
7440-23-5	Sodium	302.00	B	E	P
7440-28-0	Thallium	0.61	B		F
7440-62-2	Vanadium	23.60			P
7440-66-6	Zinc	317.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0003

9713517.0857

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z2
B01722

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-15S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7290.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	4.90		*	F
7440-39-3	Barium	106.00			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	4.50			P
7440-70-2	Calcium	7490.00		*	P
7440-47-3	Chromium	15.40			P
7440-48-4	Cobalt	6.40	B		P
7440-50-8	Copper	30.70			P
7439-89-6	Iron	13000.00			P
7439-92-1	Lead	28.40		*	F
7439-95-4	Magnesium	4310.00			P
7439-96-5	Manganese	533.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	16.00			P
7440-09-7	Potassium	1450.00			P
7782-49-2	Selenium	1.10		*	F
7440-22-4	Silver	1.30	B		P
7440-23-5	Sodium	390.00	B	E	P
7440-28-0	Thallium	0.77	B		F
7440-62-2	Vanadium	26.00			P
7440-66-6	Zinc	322.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0004

9213517.0858

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z3
B01723

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-16S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6480.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	6.50		*	F
7440-39-3	Barium	84.00			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	2.70			P
7440-70-2	Calcium	11000.00		*	P
7440-47-3	Chromium	14.10			P
7440-48-4	Cobalt	5.80	B		P
7440-50-8	Copper	26.20			P
7439-89-6	Iron	12100.00			P
7439-92-1	Lead	23.20		*	F
7439-95-4	Magnesium	4040.00			P
7439-96-5	Manganese	640.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.30			P
7440-09-7	Potassium	1750.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	1.00	B		P
7440-23-5	Sodium	466.00	B	E	P
7440-28-0	Thallium	0.37	B		F
7440-62-2	Vanadium	26.90			P
7440-66-6	Zinc	256.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0065

9713517.0859

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z4
B01724

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-17S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6830.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	4.80		*	F
7440-39-3	Barium	74.00			P
7440-41-7	Beryllium	0.48	B		P
7440-43-9	Cadmium	3.20			P
7440-70-2	Calcium	4750.00		*	P
7440-47-3	Chromium	15.40			P
7440-48-4	Cobalt	6.40	B		P
7440-50-8	Copper	23.10			P
7439-89-6	Iron	13800.00			P
7439-92-1	Lead	19.10		*	F
7439-95-4	Magnesium	4120.00			P
7439-96-5	Manganese	312.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.60			P
7440-09-7	Potassium	1160.00			P
7782-49-2	Selenium	0.73	B	*	F
7440-22-4	Silver	1.40	B		P
7440-23-5	Sodium	220.00	B	E	P
7440-28-0	Thallium	0.66	B		F
7440-62-2	Vanadium	31.50			P
7440-66-6	Zinc	270.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0066

9213517.0860

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z5
B01725

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-18S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6820.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	4.70		*	F
7440-39-3	Barium	88.30			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	4.50			P
7440-70-2	Calcium	11400.00		*	P
7440-47-3	Chromium	16.70			P
7440-48-4	Cobalt	6.10	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	13300.00			P
7439-92-1	Lead	36.40		*	F
7439-95-4	Magnesium	3950.00			P
7439-96-5	Manganese	370.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	13.90			P
7440-09-7	Potassium	1300.00			P
7782-49-2	Selenium	1.40		S*	F
7440-22-4	Silver	0.99	U		P
7440-23-5	Sodium	278.00	B	E	P
7440-28-0	Thallium	0.75	B		F
7440-62-2	Vanadium	28.60			P
7440-66-6	Zinc	332.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0007

9713517.0861

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER:

B017Z6
B01726

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-19S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10000.00			P
7440-36-0	Antimony	3.20	U	N	P
7440-38-2	Arsenic	9.40		*	F
7440-39-3	Barium	131.00			P
7440-41-7	Beryllium	0.69	B		P
7440-43-9	Cadmium	3.00			P
7440-70-2	Calcium	6690.00		*	P
7440-47-3	Chromium	21.00			P
7440-48-4	Cobalt	9.20	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	17700.00			P
7439-92-1	Lead	36.50		*	F
7439-95-4	Magnesium	5830.00			P
7439-96-5	Manganese	786.00			P
7439-97-6	Mercury	0.10		N	CV
7440-02-0	Nickel	20.80			P
7440-09-7	Potassium	2010.00			P
7782-49-2	Selenium	0.70	U	W*	F
7440-22-4	Silver	1.30	B		P
7440-23-5	Sodium	349.00	B	E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	35.20			P
7440-66-6	Zinc	332.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0008

9713517.0862

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01829

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-01S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7040.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	8.90		*	F
7440-39-3	Barium	84.50			P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium	4.10			P
7440-70-2	Calcium	8350.00		*	P
7440-47-3	Chromium	14.90			P
7440-48-4	Cobalt	7.00	B		P
7440-50-8	Copper	27.30			P
7439-89-6	Iron	14300.00			P
7439-92-1	Lead	29.20		*	F
7439-95-4	Magnesium	4090.00			P
7439-96-5	Manganese	390.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	13.90			P
7440-09-7	Potassium	1380.00			P
7782-49-2	Selenium	1.40		*	F
7440-22-4	Silver	0.97	U		P
7440-23-5	Sodium	296.00	B	E	P
7440-28-0	Thallium	0.88	B		F
7440-62-2	Vanadium	32.10			P
7440-66-6	Zinc	294.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C009

FORM I - IN ILM02.0

9713517.0863

WESTINGHOUSE/HANFORD
1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01830

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-02S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6720.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	8.90		*	F
7440-39-3	Barium	72.60			P
7440-41-7	Beryllium	0.14	U		P
7440-43-9	Cadmium	1.80			P
7440-70-2	Calcium	6280.00		*	P
7440-47-3	Chromium	15.10			P
7440-48-4	Cobalt	6.90	B		P
7440-50-8	Copper	19.70			P
7439-89-6	Iron	14100.00			P
7439-92-1	Lead	27.50		*	F
7439-95-4	Magnesium	3940.00			P
7439-96-5	Manganese	455.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	12.40			P
7440-09-7	Potassium	1360.00			P
7782-49-2	Selenium	0.85	B	*	F
7440-22-4	Silver	0.96	U		P
7440-23-5	Sodium	404.00	B	E	P
7440-28-0	Thallium	0.51	B		F
7440-62-2	Vanadium	35.00			P
7440-66-6	Zinc	220.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C010

9713517.0864

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B01831

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-03S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7630.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	5.00		*	F
7440-39-3	Barium	88.70			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	4.80			P
7440-70-2	Calcium	9470.00		*	P
7440-47-3	Chromium	19.70			P
7440-48-4	Cobalt	5.90	B		P
7440-50-8	Copper	30.30			P
7439-89-6	Iron	14100.00			P
7439-92-1	Lead	34.30		*	F
7439-95-4	Magnesium	3970.00			P
7439-96-5	Manganese	413.00			P
7439-97-6	Mercury	0.15		N	CV
7440-02-0	Nickel	14.90			P
7440-09-7	Potassium	1140.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	1.10	B		P
7440-23-5	Sodium	258.00	B	E	P
7440-28-0	Thallium	0.55	B		F
7440-62-2	Vanadium	29.30			P
7440-66-6	Zinc	334.00		N	P
	Cyanide				NR

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C011

9213517.0865

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01832

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-04S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	732.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	2.30		S*	F
7440-39-3	Barium	54.20			P
7440-41-7	Beryllium	0.14	U		P
7440-43-9	Cadmium	6.20			P
7440-70-2	Calcium	11000.00		*	P
7440-47-3	Chromium	1.30	B		P
7440-48-4	Cobalt	1.50	B		P
7440-50-8	Copper	13.10			P
7439-89-6	Iron	1440.00			P
7439-92-1	Lead	5.80		*	F
7439-95-4	Magnesium	2690.00			P
7439-96-5	Manganese	508.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	3.30	B		P
7440-09-7	Potassium	15800.00			P
7782-49-2	Selenium	1.00		*	F
7440-22-4	Silver	0.98	U		P
7440-23-5	Sodium	8200.00		E	P
7440-28-0	Thallium	0.96	B		F
7440-62-2	Vanadium	2.30	B		P
7440-66-6	Zinc	177.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
FERNS

C012

9713517.0866

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01833

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-05S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2650.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	3.10		*	F
7440-39-3	Barium	73.30			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	6.50			P
7440-70-2	Calcium	8920.00		*	P
7440-47-3	Chromium	4.80			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	18.50			P
7439-89-6	Iron	4620.00			P
7439-92-1	Lead	20.70		*	F
7439-95-4	Magnesium	3290.00			P
7439-96-5	Manganese	553.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	9.00			P
7440-09-7	Potassium	10100.00			P
7782-49-2	Selenium	0.79	U	W*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	5130.00		E	P
7440-28-0	Thallium	1.00	B		F
7440-62-2	Vanadium	8.30	B		P
7440-66-6	Zinc	225.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0013

9713517.0867

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01834

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-06S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 94.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5060.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	5.30		*	F
7440-39-3	Barium	87.30			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	5.70			P
7440-70-2	Calcium	8230.00		*	P
7440-47-3	Chromium	8.30			P
7440-48-4	Cobalt	5.00	B		P
7440-50-8	Copper	23.10			P
7439-89-6	Iron	9010.00			P
7439-92-1	Lead	15.70		*	F
7439-95-4	Magnesium	3890.00			P
7439-96-5	Manganese	621.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	11.20			P
7440-09-7	Potassium	8820.00			P
7782-49-2	Selenium	1.20		S*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4310.00		E	P
7440-28-0	Thallium	0.99	B		F
7440-62-2	Vanadium	18.00			P
7440-66-6	Zinc	256.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C014

9713517.0848

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01835

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-07S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3010.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	6.30		S*	F
7440-39-3	Barium	72.60			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	6.10			P
7440-70-2	Calcium	8190.00		*	P
7440-47-3	Chromium	6.60			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	20.10			P
7439-89-6	Iron	5480.00			P
7439-92-1	Lead	17.20		*	F
7439-95-4	Magnesium	3360.00			P
7439-96-5	Manganese	545.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	7.50	B		P
7440-09-7	Potassium	11000.00			P
7782-49-2	Selenium	1.40		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4890.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	10.10	B		P
7440-66-6	Zinc	239.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0015

FORM I - IN ILM02.0

9213517.0869

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01836

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-08S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3460.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.30		*	F
7440-39-3	Barium	80.80			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	6.20			P
7440-70-2	Calcium	9070.00		*	P
7440-47-3	Chromium	6.30			P
7440-48-4	Cobalt	2.80	B		P
7440-50-8	Copper	22.00			P
7439-89-6	Iron	6050.00			P
7439-92-1	Lead	22.10		*	F
7439-95-4	Magnesium	3500.00			P
7439-96-5	Manganese	568.00			P
7439-97-6	Mercury	0.16		N	CV
7440-02-0	Nickel	8.20	B		P
7440-09-7	Potassium	9760.00			P
7782-49-2	Selenium	1.00	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4580.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	11.30			P
7440-66-6	Zinc	269.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C016

9213517.0820

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01837

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-09S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4880.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.60		S*	F
7440-39-3	Barium	89.20			P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	6.30			P
7440-70-2	Calcium	8840.00		*	P
7440-47-3	Chromium	8.40			P
7440-48-4	Cobalt	4.30	B		P
7440-50-8	Copper	25.90			P
7439-89-6	Iron	8150.00			P
7439-92-1	Lead	20.60		*	F
7439-95-4	Magnesium	3900.00			P
7439-96-5	Manganese	560.00			P
7439-97-6	Mercury	0.11		N	CV
7440-02-0	Nickel	11.00			P
7440-09-7	Potassium	8740.00			P
7782-49-2	Selenium	1.10		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4100.00		E	P
7440-28-0	Thallium	1.00	B		F
7440-62-2	Vanadium	15.40			P
7440-66-6	Zinc	288.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C017

9213517.0871

WESTINGHOUSE/HANFORD

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B01838

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-10S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2870.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	4.60		*	F
7440-39-3	Barium	72.90			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	8.30			P
7440-70-2	Calcium	9810.00		*	P
7440-47-3	Chromium	5.50			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	20.60			P
7439-89-6	Iron	4790.00			P
7439-92-1	Lead	16.30		*	F
7439-95-4	Magnesium	3400.00			P
7439-96-5	Manganese	630.00			P
7439-97-6	Mercury	0.10		N	CV
7440-02-0	Nickel	12.70			P
7440-09-7	Potassium	12800.00			P
7782-49-2	Selenium	1.50		M*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	6770.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	8.70	B		P
7440-66-6	Zinc	262.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0018

9213517.0872

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01839

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-11S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3410.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	4.10		*	F
7440-39-3	Barium	73.50			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	7.80			P
7440-70-2	Calcium	9920.00		*	P
7440-47-3	Chromium	5.30			P
7440-48-4	Cobalt	3.30	B		P
7440-50-8	Copper	21.60			P
7439-89-6	Iron	5710.00			P
7439-92-1	Lead	17.00		*	F
7439-95-4	Magnesium	3670.00			P
7439-96-5	Manganese	577.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	9.30			P
7440-09-7	Potassium	12300.00			P
7782-49-2	Selenium	1.20		*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	6230.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	10.40	B		P
7440-66-6	Zinc	272.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C019

9715517.0873

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01840

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-12S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4270.00			P
7440-36-0	Antimony	3.60	U	N	P
7440-38-2	Arsenic	4.20		*	F
7440-39-3	Barium	108.00			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	8.90			P
7440-70-2	Calcium	9960.00		*	P
7440-47-3	Chromium	9.20			P
7440-48-4	Cobalt	4.20	B		P
7440-50-8	Copper	27.00			P
7439-89-6	Iron	7430.00			P
7439-92-1	Lead	11.90		*	F
7439-95-4	Magnesium	4190.00			P
7439-96-5	Manganese	770.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	11.30			P
7440-09-7	Potassium	9880.00			P
7782-49-2	Selenium	0.84	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	4500.00		E	P
7440-28-0	Thallium	1.10	B		F
7440-62-2	Vanadium	12.50			P
7440-66-6	Zinc	331.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0020

9213517.0874

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01841

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-13S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5880.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	4.70		*	F
7440-39-3	Barium	110.00			P
7440-41-7	Beryllium	0.15	U		P
7440-43-9	Cadmium	7.80			P
7440-70-2	Calcium	8170.00		*	P
7440-47-3	Chromium	12.10			P
7440-48-4	Cobalt	5.40	B		P
7440-50-8	Copper	29.10			P
7439-89-6	Iron	10000.00			P
7439-92-1	Lead	15.10		*	F
7439-95-4	Magnesium	4600.00			P
7439-96-5	Manganese	724.00			P
7439-97-6	Mercury	0.05	U	N	CV
7440-02-0	Nickel	14.50			P
7440-09-7	Potassium	8450.00			P
7782-49-2	Selenium	0.94	B	*	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	3550.00		E	P
7440-28-0	Thallium	1.20	B		F
7440-62-2	Vanadium	18.40			P
7440-66-6	Zinc	327.00		N	P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0021

9713517.0875

ATTACHMENT 3

Summary of Data Qualifications

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01721	REVIEWER: G. Deol	DATE: 11-6-92	PAGE 7 OF 8
COMMENTS: See pages B-4, B-5 and B-6 for details.			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Sodium (Na)	J	All	ICP Serial dilution
			exceeded control limit.
Selenium (Se)	J	B01838	Duplicate injection
			precision not met
Mercury (Hg)	—	—	calculation error + % spike R > 125%
"	J	B0-1833	0.10 mg/kg
"	J	B0-1834	0.06 "
"	J	B0-1835	0.07 "
"	J	B0-1839	0.08 "
"	J	B0-1840	0.10 "
"	J	B0-1841	0.08 "
"	J	B01724	0.06 "
"	J	B01725	0.06 "
Antimony (Sb)	J	B01721	% spike R = 56.3 %
	UJ	All other samples	" " " "
Mercury (Hg)	J	All samples	" " " = 129.2 %
Zinc (Zn)	J	" "	" " " = 139.1 %
Arsenic (As)	J	All samples	RPD out of control
Calcium (Ca)	J	" "	" " " "
Lead (Pb)	J	" "	" " " "
Selenium (Se)	UJ	B01721, B01726 B01833	" " " "
		All other samples	" " " "

Pg B-4

Pg B-5

9713517.0877

ATTACHMENT 4

As Qualified Data Summary

9713517.0878

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z1

~~B017ET~~

B01721

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-14S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6760.00			P	
7440-36-0	Antimony	4.40	B	N	P	J
7440-38-2	Arsenic	6.80		*	F	J
7440-39-3	Barium	83.00			P	
7440-41-7	Beryllium	0.27	B		P	
7440-43-9	Cadmium	5.10			P	
7440-70-2	Calcium	5820.00		*	P	J
7440-47-3	Chromium	18.10			P	
7440-48-4	Cobalt	5.60	B		P	
7440-50-8	Copper	29.80			P	
7439-89-6	Iron	11800.00			P	
7439-92-1	Lead	38.90		*	F	J
7439-95-4	Magnesium	3930.00			P	
7439-96-5	Manganese	419.00			P	
7439-97-6	Mercury	0.11		N	CV	J
7440-02-0	Nickel	14.20			P	
7440-09-7	Potassium	1470.00			P	
7782-49-2	Selenium	0.74	U	W*	F	UJ
7440-22-4	Silver	1.00	B		P	
7440-23-5	Sodium	302.00	B	E	P	J
7440-28-0	Thallium	0.61	B		F	
7440-62-2	Vanadium	23.60			P	
7440-66-6	Zinc	317.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0003

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

~~B017Z2~~
B01722

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-15S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7290.00			P	
7440-36-0	Antimony	3.20	U	N	P	UJ
7440-38-2	Arsenic	4.90		*	F	J
7440-39-3	Barium	106.00			P	
7440-41-7	Beryllium	0.33	B		P	
7440-43-9	Cadmium	4.50			P	
7440-70-2	Calcium	7490.00		*	P	J
7440-47-3	Chromium	15.40			P	
7440-48-4	Cobalt	6.40	B		P	
7440-50-8	Copper	30.70			P	
7439-89-6	Iron	13000.00			P	
7439-92-1	Lead	28.40		*	F	J
7439-95-4	Magnesium	4310.00			P	
7439-96-5	Manganese	533.00			P	
7439-97-6	Mercury	0.05	U	N	CV	UJ
7440-02-0	Nickel	16.00			P	
7440-09-7	Potassium	1450.00			P	
7782-49-2	Selenium	1.10		*	F	J
7440-22-4	Silver	1.30	B		P	
7440-23-5	Sodium	390.00	B	E	P	J
7440-28-0	Thallium	0.77	B		F	
7440-62-2	Vanadium	26.00			P	
7440-66-6	Zinc	322.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0004

9713517.0880

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z3
B017Z3

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-16S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6480.00			P	
7440-36-0	Antimony	3.30	U	N	P	UJ
7440-38-2	Arsenic	6.50		*	F	J
7440-39-3	Barium	84.00			P	
7440-41-7	Beryllium	0.27	B		P	
7440-43-9	Cadmium	2.70			P	J
7440-70-2	Calcium	11000.00		*	P	
7440-47-3	Chromium	14.10			P	
7440-48-4	Cobalt	5.80	B		P	
7440-50-8	Copper	26.20			P	
7439-89-6	Iron	12100.00			P	
7439-92-1	Lead	23.20		*	F	J
7439-95-4	Magnesium	4040.00			P	
7439-96-5	Manganese	640.00			P	
7439-97-6	Mercury	0.05	U	N	CV	J
7440-02-0	Nickel	13.30			P	
7440-09-7	Potassium	1750.00			P	
7782-49-2	Selenium	1.00		*	F	J
7440-22-4	Silver	1.00	B		P	
7440-23-5	Sodium	466.00	~~B~~	E	P	J
7440-28-0	Thallium	0.37	B		F	
7440-62-2	Vanadium	26.90			P	
7440-66-6	Zinc	256.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0065

9713517.0891

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z4
B01724

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-17S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6830.00			P	
7440-36-0	Antimony	3.20	~~U~~	N	P	UJ
7440-38-2	Arsenic	4.80		*	F	J
7440-39-3	Barium	74.00			P	
7440-41-7	Beryllium	0.48	B		P	
7440-43-9	Cadmium	3.20			P	
7440-70-2	Calcium	4750.00		*	P	J
7440-47-3	Chromium	15.40			P	
7440-48-4	Cobalt	6.40	B		P	
7440-50-8	Copper	23.10			P	
7439-89-6	Iron	13800.00			P	
7439-92-1	Lead	19.10		*	F	J
7439-95-4	Magnesium	4120.00			P	
7439-96-5	Manganese	312.00			P	
7439-97-6	Mercury	0.06 ~~0.05~~	~~U~~	N	CV	~~UJ~~
7440-02-0	Nickel	13.60			P	
7440-09-7	Potassium	1160.00			P	
7782-49-2	Selenium	0.73	B	*	F	J
7440-22-4	Silver	1.40	B		P	
7440-23-5	Sodium	220.00	B	E	P	J
7440-28-0	Thallium	0.66	B		F	
7440-62-2	Vanadium	31.50			P	
7440-66-6	Zinc	270.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0006

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z5
B01725

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-18S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6820.00			P	
7440-36-0	Antimony	3.30	U	N	P	UJ
7440-38-2	Arsenic	4.70		*	F	J
7440-39-3	Barium	88.30			P	
7440-41-7	Beryllium	0.42	B		P	
7440-43-9	Cadmium	4.50			P	
7440-70-2	Calcium	11400.00		*	P	J
7440-47-3	Chromium	16.70			P	
7440-48-4	Cobalt	6.10	B		P	
7440-50-8	Copper	30.30			P	
7439-89-6	Iron	13300.00			P	
7439-92-1	Lead	36.40		*	F	J
7439-95-4	Magnesium	3950.00			P	
7439-96-5	Manganese	370.00			P	
7439-97-6	Mercury	0.06 ~~0.05~~	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	13.90			P	
7440-09-7	Potassium	1300.00			P	
7782-49-2	Selenium	1.40		S*	F	J
7440-22-4	Silver	0.99	U		P	
7440-23-5	Sodium	278.00	B	E	P	J
7440-28-0	Thallium	0.75	B		F	
7440-62-2	Vanadium	28.60			P	
7440-66-6	Zinc	332.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0007

9213517.0893

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B017Z6
B01726

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-19S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10000.00			P	
7440-36-0	Antimony	3.20	U	N	P	UJ
7440-38-2	Arsenic	9.40		*	F	J
7440-39-3	Barium	131.00			P	
7440-41-7	Beryllium	0.69	B		P	
7440-43-9	Cadmium	3.00			P	
7440-70-2	Calcium	6690.00		*	P	J
7440-47-3	Chromium	21.00			P	
7440-48-4	Cobalt	9.20	B		P	
7440-50-8	Copper	30.30			P	
7439-89-6	Iron	17700.00			P	
7439-92-1	Lead	36.50		*	F	J
7439-95-4	Magnesium	5830.00			P	
7439-96-5	Manganese	786.00			P	
7439-97-6	Mercury	0.10		N	CV	J
7440-02-0	Nickel	20.80			P	
7440-09-7	Potassium	2010.00			P	
7782-49-2	Selenium	0.70	U	W*	F	UJ
7440-22-4	Silver	1.30	B		P	
7440-23-5	Sodium	349.00	B	E	P	J
7440-28-0	Thallium	1.10	B		F	
7440-62-2	Vanadium	35.20			P	
7440-66-6	Zinc	332.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0003

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01829

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-01S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 99.0

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7040.00			P	
7440-36-0	Antimony	3.30	U	N	P	UJ
7440-38-2	Arsenic	8.90		*	F	J
7440-39-3	Barium	84.50			P	
7440-41-7	Beryllium	0.29	B		P	
7440-43-9	Cadmium	4.10			P	
7440-70-2	Calcium	8350.00		*	P	J
7440-47-3	Chromium	14.90			P	
7440-48-4	Cobalt	7.00	B		P	
7440-50-8	Copper	27.30			P	
7439-89-6	Iron	14300.00			P	
7439-92-1	Lead	29.20		*	F	J
7439-95-4	Magnesium	4090.00			P	
7439-96-5	Manganese	390.00			P	
7439-97-6	Mercury	0.11		N	CV	J
7440-02-0	Nickel	13.90			P	
7440-09-7	Potassium	1380.00			P	
7782-49-2	Selenium	1.40		*	F	J
7440-22-4	Silver	0.97	U		P	
7440-23-5	Sodium	296.00	B	E	P	J
7440-28-0	Thallium	0.88	B		F	
7440-62-2	Vanadium	32.10			P	
7440-66-6	Zinc	294.00		N	P	J
	Cyanide				NR	

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

9713517.0895

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01830

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-02S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 98.3

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	6720.00			P	
7440-36-0	Antimony	3.30	U	N	P	UJ
7440-38-2	Arsenic	8.90		*	F	J
7440-39-3	Barium	72.60			P	
7440-41-7	Beryllium	0.14	U		P	
7440-43-9	Cadmium	1.80			P	
7440-70-2	Calcium	6280.00		*	P	J
7440-47-3	Chromium	15.10			P	
7440-48-4	Cobalt	6.90	B		P	
7440-50-8	Copper	19.70			P	
7439-89-6	Iron	14100.00			P	
7439-92-1	Lead	27.50		*	F	J
7439-95-4	Magnesium	3940.00			P	
7439-96-5	Manganese	455.00			P	
7439-97-6	Mercury	0.05	U	N	CV	J
7440-02-0	Nickel	12.40			P	
7440-09-7	Potassium	1360.00			P	
7782-49-2	Selenium	0.85	B	*	F	J
7440-22-4	Silver	0.96	U		P	
7440-23-5	Sodium	404.00	~~B~~	E	P	J
7440-28-0	Thallium	0.51	B		F	
7440-62-2	Vanadium	35.00			P	
7440-66-6	Zinc	220.00		N	P	J
	Cyanide				NR	

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

C010

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01831

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-03S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 97.3

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7630.00			P	
7440-36-0	Antimony	3.40	U	N	P	UJ
7440-38-2	Arsenic	5.00		*	F	J
7440-39-3	Barium	88.70			P	
7440-41-7	Beryllium	0.42	B		P	
7440-43-9	Cadmium	4.80			P	
7440-70-2	Calcium	9470.00		*	P	J
7440-47-3	Chromium	19.70			P	
7440-48-4	Cobalt	5.90	B		P	
7440-50-8	Copper	30.30			P	
7439-89-6	Iron	14100.00			P	
7439-92-1	Lead	34.30		*	F	J
7439-95-4	Magnesium	3970.00			P	
7439-96-5	Manganese	413.00			P	
7439-97-6	Mercury	0.15		N	CV	J
7440-02-0	Nickel	14.90			P	
7440-09-7	Potassium	1140.00			P	
7782-49-2	Selenium	1.00		*	F	J
7440-22-4	Silver	1.10	B		P	
7440-23-5	Sodium	258.00	~~B~~	E	P	J
7440-28-0	Thallium	0.55	B		F	
7440-62-2	Vanadium	29.30			P	
7440-66-6	Zinc	334.00		N	P	J
	Cyanide				NR	

Color Before: GREY Clarity Before: Texture: FINE

Color After: GREY Clarity After: Artifacts:

Comments:

9713517.0897

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01832

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-04S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 95.9

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	732.00			P	
7440-36-0	Antimony	3.30	U	N	P	UJ
7440-38-2	Arsenic	2.30		S*	F	J
7440-39-3	Barium	54.20			P	
7440-41-7	Beryllium	0.14	U		P	
7440-43-9	Cadmium	6.20			P	
7440-70-2	Calcium	11000.00		*	P	J
7440-47-3	Chromium	1.30	B		P	
7440-48-4	Cobalt	1.50	B		P	
7440-50-8	Copper	13.10			P	
7439-89-6	Iron	1440.00			P	
7439-92-1	Lead	5.80		*	F	J
7439-95-4	Magnesium	2690.00			P	
7439-96-5	Manganese	508.00			P	
7439-97-6	Mercury	0.05	U	N	CV	UJ
7440-02-0	Nickel	3.30	B		P	
7440-09-7	Potassium	15800.00			P	
7782-49-2	Selenium	1.00		*	F	J
7440-22-4	Silver	0.98	U		P	
7440-23-5	Sodium	8200.00		E	P	J
7440-28-0	Thallium	0.96	B		F	
7440-62-2	Vanadium	2.30	B		P	
7440-66-6	Zinc	177.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
FERNS

0012

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01833

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-05S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2650.00			P	
7440-36-0	Antimony	3.40	U	N	P	UJ
7440-38-2	Arsenic	3.10		*	F	J
7440-39-3	Barium	73.30			P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	6.50			P	
7440-70-2	Calcium	8920.00		*	P	J
7440-47-3	Chromium	4.80			P	
7440-48-4	Cobalt	3.10	B		P	
7440-50-8	Copper	18.50			P	
7439-89-6	Iron	4620.00			P	
7439-92-1	Lead	20.70		*	F	J
7439-95-4	Magnesium	3290.00			P	
7439-96-5	Manganese	553.00			P	
7439-97-6	Mercury	0.10 ~~0.05~~	~~U~~	N	CV	J
7440-02-0	Nickel	9.00			P	
7440-09-7	Potassium	10100.00			P	
7782-49-2	Selenium	0.79	U	W*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	5130.00		E	P	J
7440-28-0	Thallium	1.00	B		F	
7440-62-2	Vanadium	8.30	B		P	
7440-66-6	Zinc	225.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

9713517.0889

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01834

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-06S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 94.3

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5060.00			P	
7440-36-0	Antimony	3.50	U	N	P	UJ
7440-38-2	Arsenic	5.30		*	F	J
7440-39-3	Barium	87.30			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	5.70			P	
7440-70-2	Calcium	8230.00		*	P	J
7440-47-3	Chromium	8.30			P	
7440-48-4	Cobalt	5.00	B		P	
7440-50-8	Copper	23.10			P	
7439-89-6	Iron	9010.00			P	
7439-92-1	Lead	15.70		*	F	J
7439-95-4	Magnesium	3890.00			P	
7439-96-5	Manganese	621.00			P	
7439-97-6	Mercury	0.06 0.05	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	11.20			P	
7440-09-7	Potassium	8820.00			P	
7782-49-2	Selenium	1.20		S*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	4310.00		E	P	J
7440-28-0	Thallium	0.99	B		F	
7440-62-2	Vanadium	18.00			P	
7440-66-6	Zinc	256.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C014

9713517.0890

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01835

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-07S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3010.00			P	
7440-36-0	Antimony	3.50	U	N	P	UJ
7440-38-2	Arsenic	6.30		S*	F	J
7440-39-3	Barium	72.60			P	
7440-41-7	Beryllium	0.24	B		P	
7440-43-9	Cadmium	6.10			P	
7440-70-2	Calcium	8190.00		*	P	J
7440-47-3	Chromium	6.60			P	
7440-48-4	Cobalt	3.10	B		P	
7440-50-8	Copper	20.10			P	
7439-89-6	Iron	5480.00			P	
7439-92-1	Lead	17.20		*	F	J
7439-95-4	Magnesium	3360.00			P	
7439-96-5	Manganese	545.00			P	
7439-97-6	Mercury	0.07 0.05	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	7.50	B		P	
7440-09-7	Potassium	11000.00			P	
7782-49-2	Selenium	1.40		*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	4890.00		E	P	J
7440-28-0	Thallium	1.10	B		F	
7440-62-2	Vanadium	10.10	B		P	
7440-66-6	Zinc	239.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0015

FORM I - IN ILM02.0

9713517.0891

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01836

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-08S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.8

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3460.00			P	
7440-36-0	Antimony	3.40	U	N	P	UJ
7440-38-2	Arsenic	4.30		*	F	J
7440-39-3	Barium	80.80			P	
7440-41-7	Beryllium	0.15	U		P	
7440-43-9	Cadmium	6.20			P	
7440-70-2	Calcium	9070.00		*	P	J
7440-47-3	Chromium	6.30			P	
7440-48-4	Cobalt	2.80	B		P	
7440-50-8	Copper	22.00			P	
7439-89-6	Iron	6050.00			P	
7439-92-1	Lead	22.10		*	F	J
7439-95-4	Magnesium	3500.00			P	
7439-96-5	Manganese	568.00			P	
7439-97-6	Mercury	0.16		N	CV	J
7440-02-0	Nickel	8.20	B		P	
7440-09-7	Potassium	9760.00			P	
7782-49-2	Selenium	1.00	B	*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	4580.00		E	P	J
7440-28-0	Thallium	1.20	B		F	
7440-62-2	Vanadium	11.30			P	
7440-66-6	Zinc	269.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C016

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01837

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-09S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.5

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4880.00			P	
7440-36-0	Antimony	3.40	U	N	P	UJ
7440-38-2	Arsenic	4.60		S*	F	J
7440-39-3	Barium	89.20			P	
7440-41-7	Beryllium	0.18	B		P	
7440-43-9	Cadmium	6.30			P	
7440-70-2	Calcium	8840.00		*	P	J
7440-47-3	Chromium	8.40			P	
7440-48-4	Cobalt	4.30	B		P	
7440-50-8	Copper	25.90			P	
7439-89-6	Iron	8150.00			P	
7439-92-1	Lead	20.60		*	F	J
7439-95-4	Magnesium	3900.00			P	
7439-96-5	Manganese	560.00			P	
7439-97-6	Mercury	0.11		N	CV	J
7440-02-0	Nickel	11.00			P	
7440-09-7	Potassium	8740.00			P	
7782-49-2	Selenium	1.10		*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	4100.00		E	P	J
7440-28-0	Thallium	1.00	B		F	
7440-62-2	Vanadium	15.40			P	
7440-66-6	Zinc	288.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

9715517.0893

WESTINGHOUSE/HANFORD

1

SAMPLE NUMBER:

B01838

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-10S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.6

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2870.00			P	
7440-36-0	Antimony	3.50	U	N	P	UJ
7440-38-2	Arsenic	4.60		*	F	J
7440-39-3	Barium	72.90			P	
7440-41-7	Beryllium	0.15	U		P	
7440-43-9	Cadmium	8.30			P	
7440-70-2	Calcium	9810.00		*	P	J
7440-47-3	Chromium	5.50			P	
7440-48-4	Cobalt	3.10	B		P	
7440-50-8	Copper	20.60			P	
7439-89-6	Iron	4790.00			P	
7439-92-1	Lead	16.30		*	F	J
7439-95-4	Magnesium	3400.00			P	
7439-96-5	Manganese	630.00			P	
7439-97-6	Mercury	0.10		N	CV	~~UJ~~ J 11/2/92
7440-02-0	Nickel	12.70			P	
7440-09-7	Potassium	12800.00			P	
7782-49-2	Selenium	1.50		M*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	6770.00		E	P	J
7440-28-0	Thallium	1.20	B		F	
7440-62-2	Vanadium	8.70	B		P	
7440-66-6	Zinc	262.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C018

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01839

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-11S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 92.3

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3410.00			P	
7440-36-0	Antimony	3.50	U	N	P	UJ
7440-38-2	Arsenic	4.10		*	F	J
7440-39-3	Barium	73.50			P	
7440-41-7	Beryllium	0.15	U		P	
7440-43-9	Cadmium	7.80			P	
7440-70-2	Calcium	9920.00		*	P	J
7440-47-3	Chromium	5.30			P	
7440-48-4	Cobalt	3.30	B		P	
7440-50-8	Copper	21.60			P	
7439-89-6	Iron	5710.00			P	
7439-92-1	Lead	17.00		*	F	J
7439-95-4	Magnesium	3670.00			P	
7439-96-5	Manganese	577.00			P	
7439-97-6	Mercury	0.08 ~~0.05~~	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	9.30			P	
7440-09-7	Potassium	12300.00			P	
7782-49-2	Selenium	1.20		*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	6230.00		E	P	J
7440-28-0	Thallium	1.10	B		F	
7440-62-2	Vanadium	10.40	B		P	
7440-66-6	Zinc	272.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C019

9713517.0895

WESTINGHOUSE/HANFORD

SAMPLE NUMBER:

B01840

INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-12S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 91.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4270.00			P	
7440-36-0	Antimony	3.60	U	N	P	UJ
7440-38-2	Arsenic	4.20		*	F	J
7440-39-3	Barium	108.00			P	
7440-41-7	Beryllium	0.26	B		P	
7440-43-9	Cadmium	8.90			P	
7440-70-2	Calcium	9960.00		*	P	J
7440-47-3	Chromium	9.20			P	
7440-48-4	Cobalt	4.20	B		P	
7440-50-8	Copper	27.00			P	
7439-89-6	Iron	7430.00			P	
7439-92-1	Lead	11.90		*	F	J
7439-95-4	Magnesium	4190.00			P	
7439-96-5	Manganese	770.00			P	
7439-97-6	Mercury	0.10 ~~0.05~~	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	11.30			P	
7440-09-7	Potassium	9880.00			P	
7782-49-2	Selenium	0.84	B	*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	4500.00		E	P	J
7440-28-0	Thallium	1.10	B		F	
7440-62-2	Vanadium	12.50			P	
7440-66-6	Zinc	331.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

C020

SAMPLE NUMBER:

INORGANIC ANALYSIS DATA SHEET

B01841

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N2-07-079SAS No.: SDG No.: B017Z1

Matrix (soil/water): SOIL Lab Sample ID: 07165-13S

Level (low/med): LOW Date Received: 07/21/92

% Solids: 93.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5880.00			P	
7440-36-0	Antimony	3.40	U	N	P	UJ
7440-38-2	Arsenic	4.70		*	F	J
7440-39-3	Barium	110.00			P	
7440-41-7	Beryllium	0.15	U		P	
7440-43-9	Cadmium	7.80			P	
7440-70-2	Calcium	8170.00		*	P	J
7440-47-3	Chromium	12.10			P	
7440-48-4	Cobalt	5.40	B		P	
7440-50-8	Copper	29.10			P	
7439-89-6	Iron	10000.00			P	
7439-92-1	Lead	15.10		*	F	J
7439-95-4	Magnesium	4600.00			P	
7439-96-5	Manganese	724.00			P	
7439-97-6	Mercury	0.08 ~~0.05~~	~~U~~	N	CV	~~UJ~~ J
7440-02-0	Nickel	14.50			P	
7440-09-7	Potassium	8450.00			P	
7782-49-2	Selenium	0.94	~~B~~	*	F	J
7440-22-4	Silver	1.00	U		P	
7440-23-5	Sodium	3550.00		E	P	J
7440-28-0	Thallium	1.20	B		F	
7440-62-2	Vanadium	18.40			P	
7440-66-6	Zinc	327.00		N	P	J
	Cyanide				NR	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

9713517.0897

ATTACHMENT 5

Data Review Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: Westinghouse Hanford	REVIEWER: G. Dool	DATE: 11-5-92
LABORATORY: TMA/Skinner + Sherman	CASE: N2-07-079	SDG: B01721
SAMPLE/MATRIX: 19 - Soil		B01721
(Attachment: pages B1 to B8)		
Analysis performed per SOW NO 3/90		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	☑	☐	☐
Cover Page	☑	☐	☐
Traffic Reports	☑	☐	☐
Sample Data			
Inorganic Analysis Data Sheets	☑	☐	☐
Standards Data			
Initial and Continuing Calibration Verification	☑	☐	☐
CRDL Standard for AA and ICP	☑	☐	☐
QC Summary			
Blanks	☑	☐	☐
ICP Interference Check Summary	☑	☐	☐
Spike Sample Recovery	☑	☐	☐
Post-Digestion Spike Sample Recovery	☑	☐	☐
Duplicate	☑	☐	☐
Laboratory Control Sample	☑	☐	☐
Standard Addition Results	☑	☐	☐
ICP Serial Dilutions	☑	☐	☐
Instrument Detection Limits	☑	☐	☐
ICP Interelement Correction Factors	☑	☐	☐
ICP Linear Ranges	☑	☐	☐
Preparation Log	☑	☐	☐
Analysis Run Log	☑	☐	☐
Raw Data			
ICP Raw Data	☑	☐	☐
Furnace AA Raw Data	☑	☐	☐
Mercury Raw Data	☑	☐	☐
Cyanide Raw Data	☐	☐	☑
Additional Data			
Internal laboratory chain-of-custody	☑	☐	☐
Laboratory Sample Preparation Records	☑	☐	☐

Data Package Item	Present?: Yes	No	N/A
Percent Solids Analysis Records	☑	☐	☐
Reduction Formulae	☑	☐	☐
Instrument Run Logs	☑	☐	☐
Chemist notebook pages	☑	☐	☐

2. HOLDING TIMES (Form B-1)

Have all samples been analyzed within holding times?	(Yes)	No	N/A

ACTION: If any holding times have been exceeded qualify all affected results as estimated (J for\ detects and UJ for nondetects).

3. INITIAL CALIBRATIONS (Form B-2)

Were all instruments calibrated daily, each set-up time and was the proper number of standards used?	(Yes)	No	N/A
Are the correlation coefficients ≥0.995?	(Yes)	No	N/A
Was a midrange cyanide standard distilled?	Yes	No	(N/A)

ACTION: Qualify all data as unusable if reported from an analysis in which an instrument was not calibrated or was calibrated with less than the minimum number of standards. Qualify associated sample results >IDL as estimated (J) and results <IDL as estimated (UJ), if the correlation coefficient is <0.0995 or the laboratory did not distill the midrange cyanide standard.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION (Form B-2)

Are ICV and CCV percent recoveries within control limits?	(Yes)	No	N/A
Are there calculation errors?	Yes	(No)	N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

5. ICP INTERFERENCE CHECK SAMPLE (Form B-2)

Has an ICS sample been analyzed at the proper frequency?	(Yes)	No	N/A
Are the AB solution %R values within control?	(Yes)	No	N/A
Are there calculation errors?	Yes	(No)	N/A

ACTION: Qualify all affected data in accordance with Section 8.3 of the validation requirements. If calculation errors are noted, contact the laboratory for clarification.

6. LABORATORY BLANKS (Form B-3)

Are target compounds present in the blanks? Yes (No) N/A

ACTION: Qualify all associated positive results for any analyte <5 times the amount in any laboratory blank as nondetected (U). If analyte concentrations in the blank are >CRDL or below the negative CRDL, verify the laboratory has redigested and reanalyzed associated samples with analyte concentrations <10 times the blank concentration. If the laboratory has not redigested and reanalyzed the samples, note in the validation narrative.

7. FIELD BLANKS (Form B-3)

Are target analytes present in the field blanks? Yes No (N/A)

ACTION: Qualify all sample results for any analyte <5 times the amount in any field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS (Form B-4)

Are spike recoveries within the control limits? Yes (No) N/A

ACTION: Qualify the affected sample data according to the following requirements:

If spike recovery is >125% and sample results are <IDL no qualification is required. If spike recovery is >125% or <75% qualify all positive results as estimated (J). If spike recovery is 30% to 74% qualify all nondetects as estimated (UJ). If spike recovery is <30%, reject all nondetects (R). If the field blank has been used for spike analysis, note in the validation narrative.

9. LABORATORY CONTROL SAMPLE (Form B-4)

Are percent recoveries within the acceptance limits? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the sample data according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results >IDL, for which the LCS %R falls within the range 50-79% or >120%. Qualify as estimated (UJ), all sample results <IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results >IDL for which the LCS result is outside the established control limits. Qualify as estimated (UJ), all sample results <IDL for which the LCS %R are lower than the established control limits.

10. PERFORMANCE AUDIT ANALYSIS

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample analysis in the data validation narrative.

11. DUPLICATE SAMPLE ANALYSIS (Form B-5)

Are RPD values acceptable? Yes No N/A

ACTION: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD results fall outside the appropriate control limits. If field blanks were used for laboratory duplicates, note in the validation narrative.

12. ICP SERIAL DILUTION (Form ~~B-6~~ B-7)

Are the serial dilution results acceptable? Yes No N/A

Is there evidence of negative interference? Yes No N/A

ACTION: Qualify the associated data as estimated (J) for those analytes in which the %D is outside the control limits. If evidence of negative interference is found, use professional judgement to qualify the data.

13. FIELD DUPLICATE SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

14. FIELD SPLIT SAMPLES

Do the RPD values exceed the control limits? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

15/16. FURNACE ATOMIC ABSORPTION QUALITY CONTROL (Form B-6)

Do all applicable analyses have duplicate injections? Yes No N/A

Are applicable duplicate injection RSD values within control limits? Yes No N/A

If no, were samples rerun once as required? Yes No N/A

Does the RSD for the rerun fall within the control limits? Yes No N/A

Were analytical spike recoveries within the control limits? Yes No N/A

If no, were MSA analyses performed when required?	Yes	No	N/A
Are MSA correlation coefficients ≥0.995?	Yes	No	N/A
If no, was a second MSA analysis performed?	Yes	No	N/A

ACTION: If duplicate injections are outside the acceptance limits and the sample has not been reanalyzed or the reanalysis is outside the acceptance limits, qualify the associated data as estimated (J for detects and UJ for nondetects). If the analytical spike recovery is <40% qualify detects as estimated (J). If the analytical spike recovery is ≥10% but <40%, qualify all nondetects as estimated (UJ) and if the analytical spike recovery is <10%, reject all nondetects (R). If the sample absorbance is <50% of the analytical spike absorbance and the analytical spike recovery is <85% or >115%, qualify all results as estimated (J for detects and UJ for nondetects). If method of standard additions (MSA) was required but was not performed, the MSA samples were spiked incorrectly, or the MSA correlation coefficient was <0.995, qualify the associated detected results as estimated (J).

17. ANALYTE QUANTITATION AND DETECTION LIMITS (Form B-6)

Have results been reported and calculated correctly?	Yes	No	N/A
Are results within the calibration range of the instruments and within the linear range of the ICP?	Yes	No	N/A
Are all detection limits below the CRQL?	Yes	No	N/A

ACTION: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

18. OVERALL ASSESSMENT AND SUMMARY (Form B-7)

Have the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary): The data is useable with data validation qualifiers listed on page B-7. Data quality is excellent with some ~~mab~~ minor deficiencies ~~qualifications~~ listed on page B-6.

- The matrix spike and duplicate analysis performed at a frequency of 5%.
- All the required CLP forms and applicable raw data was included in the data package

HOLDING TIME SUMMARY - FORM B-1

Case # W2-07-079

~~SDG~~:	REVIEWER: G. Deol	DATE: 11-5-92	PAGE 1 OF 8
COMMENTS: Duplicate analysis on sample # B01829 and spike analysis on B01830			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED ▲	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
~~B017Z6~~ ~~B017~~			*8/19/92 (P)	CV - 7/22/92 P - 8/20/92	P+F CV 56, 27	P F CV 1 11+18 1	none
B017Z1	CLP-Metals	6/24 + 6/26/92				" " " "	
B017Z2						" " " "	
B017Z3						" " " "	
B017Z4						" " " "	
B017Z5						" " " "	
B017Z6						" " " "	
B01829						" " " "	
B01830						" " " "	
B01831						" " " "	
B01832						" " " "	
B01833						" " " "	
B01834						" " " "	
B01835						" " " "	
B01836						" " " "	
B01837						" " " "	
B01838						" " " "	
B01839						" " " "	
B01840						" " " "	
B01841						" " " "	

* CV Preparation - 7/21/92

▲ As & Se - 9/8 + 9/9/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 80172	REVIEWER: C. Deol	DATE: 11-6-92	PAGE 2 OF 8
COMMENTS: All Ws + CCVs are acceptable and per requirements.			
CALIB.TYPE: INITIAL CONTINUING		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: [illegible]	REVIEWER: G. Deol	DATE: 11-6-92	PAGE 3 OF 8
COMMENTS: No analytes above CRDL detected in any blanks.			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
[illegible]									

ACCURACY DATA SUMMARY - FORM B-4

SDG: B01721	REVIEWER: G. Deol	DATE: 11-6-92	PAGE 4 OF 8	
COMMENTS:				
SAMPLE ID	~~COMPOUND~~ ELEMENT	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B01830S	ANTIMONY (SB)	56.3	B01721	J
			All other samples	UJ
	MERCURY (Hg)	129.2	B01721, B01726	J
			B01829, B01831,	
			B01836, B01837,	
			B01838	
	ZINC (Zn)	139.1	All samples	J

PRECISION DATA SUMMARY - FORM B-5

SDG: B01721	REVIEWER: C. Dool	DATE: 11-6-92	PAGE 5 OF 8

COMMENTS:

~~COMPOUND~~ ELEMENT	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
ARSENIC (As)	B01829	B018290	45.0	All Samples	J
CALCIUM (Ca)	"	"	27.9	" "	J
LEAD (Pb)	"	"	28.0	" "	J
SELENIUM (Se)	"	"	200.0	B01721, B01726	UJ
				B01833	
				All other 16-	J
				samples	

OVERALL ASSESSMENT - FORM B-6

SDG: B01721	REVIEWER: G. Deol	DATE: 11-7-92	PAGE 6 OF 8

COMMENTS: The overall data quality is acceptable and data is useable with specified data validation qualifiers.

- The sample collection date was listed as 6/24 and 6/26. So 6/24 sample date was used to assess holding time requirements for all samples. All samples prepared and analyzed within holding time requirements.
- Due to higher Pb concentration all samples except B01832, B01840 + B01841 were analyzed with dilution factor of 5, 10 or 20.
- The % spike recovery for Sb, Hg and Zn was out of control limits and samples are flagged per DU guidelines. (Pg B-4)
- Replicate precision was out of control limits for As, Ca, Pb and Se. The samples are flagged as applicable (Pg B-5)
- Na - ICP serial dilution exceeded control limits. (Pg B-7)
- Duplicate injection precision for Se on sample # B01838 (Pg B-7) out of control limits.
- 5-point calibration for Hg consisted of 5 stds (0, 0.2, 1.0, 2.0 + 5.0 ug/L). 8 samples with original conc. < 0.2 ug/L on raw data were reported as 0.05 U mg/kg as final Hg concentration. Corrected values are reported on page B-7 and all results are flagged J due to out of control % spike recovery.

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: B01721	REVIEWER: G. Deol	DATE: 11-6-92	PAGE 7 OF 8
COMMENTS: See pages B-4, B-5 and B-6 for details.			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Sodium (Na)	J	All	ICP Serial dilution
			exceeded control limit.
Selenium (Se)	J	B01838	Duplicate injection
			precision not met
Mercury (Hg)	~~J~~ —	—	calculation error + % R spike R > 125%
"	J	B0-1833	0.10 mg/kg
"	J	B0-1834	0.06 "
"	J	B0-1835	0.07 "
"	J	B0-1839	0.08 "
"	J	B0-1840	0.10 "
"	J	B0-1841	0.08 "
"	J	B01724	0.06 "
"	J	B01725	0.06 "
Antimony (Sb)	J	B01721	% spike R = 56.3 %
	UJ	All other samples	" " " "
Mercury (Hg)	J	All samples	" " " = 129.2 %
Zinc (Zn)	J	" "	" " " = 139.1 %
Arsenic (As)	J	All samples	RPD out of control
Calcium (Ca)	J	" "	" " " "
Lead (Pb)	J	" "	" " " "
Selenium (Se)	UJ	B01721, B01726 B01833	" " " "
		All other samples	" " " "

pg B-4

pg B-5

TELEPHONE CONTACT SUMMARY - FORM B-8

REVIEWER:	DATE:	TIME:	PAGE 8 OF 8
COMPANY:			
ADDRESS:			
PERSON CONTACTED:			
TELEPHONE:		FAX:	
PROJECT/CASE/SDG:			
REMARKS:			
ACTION:			

N/A