9308L515-WES-1224

0043284

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9308L515

W.O. #: 06168-002-001-9999-00
Date Received: 08-06-93

CLP METALS

1. This narrative covers the analyses of sixteen (16) soil samples.

2. The samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory and High Purity.

4. All analyses were performed within the required holding times.

5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.

7. All Preparation/Method Blanks were below Reporting Limits.

8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.

10. All Serial Dilution percent differences were within USEPA SOW control limits.

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more)
except for:

RFW #	Element	%Recovery
001	Selenium	66.7

For analytes where the Matrix Spike is out of control, a Post-digestion Matrix Spike and Serial Dilution are performed (exception allowed for Ag).

Matrix spike analyses are not required for Ca, Mg, Na, and K in waters and soils. Also, not required for Al and Fe in soils.

0030

12. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit except for:

RFW #	Element	%RPD
001	Lead	22.7

13. Method of Standard Additions (MSA) analyses were performed on the following samples:

Element	Sample #'s
Lead	001, 001R, 002-016

14. The code CV is currently in use by the laboratory for both mercury instruments in operation (HG1 and HG2). HG1 is complete with autosampler and software, but still requires manual digestion; HG2 is operated by the analyst, produces a strip chart and also requires manual digestion.

15. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

16. ICP Interelement Correction Factors for IC1 and IC3 are included in this package, but do not appear on EDD.

17. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

8.27.93
Date

mlj/clp-met.nar

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9308L515

W.O. #: 06168-002-001-9999-00
Date Received: 08-06-93

CLP METALS ADDENDUM

1. Following Exhibit E, Section V, Item 10, page E-23 of the USEPA Statement of Work for Inorganics Analysis, Document Number ILM02.0 ICP Instrument Detection Limits (IDLs) are reported for two (2) ICP instruments. The instrument identification numbers are "IC1" and "IC3". The highest IDL for the two instruments is used for reporting concentration values in this sample data package.

2. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

8.27.93
Date

mlj\clp-met.nar

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Collector Jon Lucas (FTL), Jay Dure, Dave Bonp Date 8-3-93

Company Contact Jon Lucas Telephone (509) 376-2789

Steve Weiss 509 376-1683

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested
B08YF8	S	7-30-93	1133	2 - 250 ml aG/ each sample ICP/GFAA Metals (CLP), Mercury (CLP), Cyanide (CLP)
B08YG0		7-30-93	1147	
B08YG2		7-30-93	1259	
B08YG4		7-30-93	1305	
B08YG5		8-2-93	1035	Gamma Spec, Sr-90, Uranium, Tc-99 - all lab specific procedures
B08YG6			1055	
B08YG7			1121	
B08YG8			1140	
B08YH3			1352	
B08YH4			1345	
B08YH5			1335	
B08YH6	↓	↓	1315	
B08YF7	X	7-30-93	1125	1 - paper bag / each sample analysis the same as soil above.
~~B08YF9~~		~~7-30-93~~	~~1145~~	DLB 8-5-93
B08YG1		7-30-93	1259	
B08YG3		7-30-93	1305	These are vegetation samples.
B08YG9		8-2-93	1030	
B08YH0			1058	
B08YH1			1115	
B08YH2			1130	
B08YH7			1350	
B08YH8			1346	
B08YH9			1334	
~~B08YJ0~~	↓	↓	~~1316~~	DLB 8-3-93

*Type of Sample: A = Air; DL = Drum Liquids; DS = Drum Solids; L = Liquid; O = Oil; S = Soil; SE = Sediment; SL = Sludge; SO = Solid; T = Tissue; W = Water; WI = Wipe; X = Other

Field Information: None

Special Handling and/or Storage: 4°C - Soil

Possible Sample Hazards: None

0002

A-6000-406 (06/91)

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Collector Jon Lucas (FTL), JC Mitchell, Dave Bert Date 8-5-93

Company Contact Jon Lucas Telephone (509) 376-2789

Steve Weiss 509 376-1683

Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested
B08YJ1	S	8-4-93	0943	2-250ml a G (each sample)-
B08YJ2	S		1008	*ICP/GFAA Metals (CLP), Mercury (CLP),
B08YJ3	S		1026	Cyanide (CLP)
B08YJ4	S		1035	*Gamma Spec., Sr-90, Uranium, Tc-99
B08YJ5	X		0930	1- paper bag (each sample) -
B08YJ6	X		0954	same analysis as described
B08YJ7	X		1019	above.
B08YJ8	X	↓	1025	These are vegetation samples.

*Type of Sample

A = Air, DL = Drum Liquids, DS = Drum Solids, L = Liquid, O = Oil, S = Soil, SE = Sediment, SL = Sludge, SO = Solid, T = Tissue, W = Water, WI = Wipe, X = Other (Vegetation)

Field Information None

Special Handling and/or Storage 4°C - soil samples

Possible Sample Hazards None

0003

A-6000-406 (06/91)

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator Jon Lucas

Company Contact Jon Lucas/Steve Weiss

Telephone 509-376-2789/376-168

Project Designation/Sampling Locations 200 Area Biota/216-U-11, 216-B-3, 216-A-24, 216-T-4-1

Collection Date 7-30-93 and 8-2-93, 8-5-93

Ice Chest No. RM#110

Field Logbook No. EFL-1094

Bill of Lading/Airbill No. 970 892 506

Offsite Property No. W93-0-0667-13

Method of Shipment ~~Emery~~ Burlington Air 8-5-93

Shipped to Weston, Lionville, PA

Possible Sample Hazards/Remarks None

Sample Identification

B08YF8	B08YH3
B08YG0	B08YH4
B08YG2	B08YH5
B08YG4	B08YH6
B08YG5	B08YJ1
B08YG6	B08YJ2
B08YG7	B08YJ3
B08YG8	B08YJ4

All samples are soil samples - 2-250 ml aG bottles per sample number

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan D. Lucas					
Airborne	8/6/93	4:00 pm	Brian E. Shuff	8/6/93	4:00 pm

Final Sample Disposition

Disposal Method: Disposed by: Date/Time:

Comments:

A-6000-407 (12/92) WEF061

~~0004~~
3A

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator Jon Lucas

Company Contact Jon Lucas/Steve Weiss

Telephone 509-376-2789/376-168

Project Designation/Sampling Locations 200 Area Biota/216-U-11, 216-B-3, 216-A-24, 216-T-4-1

Collection Date 7-30-93 and 8-2-93, 8-5-93

Ice Chest No. B-1 (fiberboard box)

Field Logbook No. EFL-1094

Bill of Lading/Airbill No. 970 892 506

Offsite Property No. W93-0-0667-13

Method of Shipment ~~Emery~~ Burlington JL 8-5-93

Shipped to Weston, Lionville, PA

Possible Sample Hazards/Remarks None

Sample Identification

B08YF7	B08YH9	
B08Y61	~~B08YJ1~~	
B08Y63	~~B08YJ2~~	JL 8-5-93 ALL SAMPLES ARE VEGETATION SAMPLES- 1 (one) paper bag per sample number
B08Y64	~~B08YJ3~~	
B08YH0	~~B08YJ4~~	
B08YH1	B08YJ5	
B08YH2	B08YJ6	
B08YH7	B08YJ7	
B08YH8	B08YJ8	

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan S. Lucas					
Airborne	8/6/93	4:00 pm	[illegible]	8/6/93	4:00 pm

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/92) WEF061

~~0005~~
3B

"Next Day Delivery"

Contractor Westinghouse Hanford Co.	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W93-0-0667-13

PART I – TO BE COMPLETED BY ORIGINATOR

Department: Env. Restor. Eng. | Section: Site Remed. Mngmt | Unit: —

The following items are to be shipped from ☑ Contractor ☐ Vendor

8-5-93 Routing ~~Emery~~ Burlington ☑ Contractor ☐ Vendor

Shipped to: Weston, 208 Welsh Pool Road, Lionville, PA 19341

Off-site Custodian: Peg Beaty

Full Title: Proj. Coor.

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 71 lbs	polyicechest container (RM#110) containing soil samples (glass bottles) packed in wet ice and vermiculite. RM#110 — B08YF8, B08YG0, B08YG2, B08YG4, B08YG5, B08YG6, B08YG7, B08YG8, B08YH3, B08YH4, B08YH5, B08YH6, B08YJ1, B08YJ2, B08YJ3, B08YJ4	
1 17 lbs	Fiber board box (B-1) containing vegitation samples (Paper bags) B-1 — B08YF7, B08YG1, B08YG3, B08YG9, B08YH0, B08YH1, B08YH2, B08YH7, B08YH8, B08YH9, ~~B08YJ1~~, ~~B08YJ2~~, ~~B08YJ3~~, ~~B08YJ4~~, B08YJ5, B08YJ6, B08YJ7, B08YJ8	8-5-93

☐ Classified ☑ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available on site.

Bill of Lading # 970 892 506

RECEIVED

AUG 5 1993

PROPERTY RECORDS

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

RM Clearance for Public Release	RM Survey No	Date
BC [illegible]	#584	8-5-93

Location of Property (Area & Bldg)	Contact	Phone
216-B-3, 200 Area Biota – 216-A-24, 216-A-41, 216-T-4-1	Jon Lucas	376-2789

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
~~8-3-93~~ 8-5-93	PLB3A	N/A

Originated By	Date	Authorized By	Date
Jon Lucas	8-3-93	[illegible]	8/3/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		J P Hankel	8/5/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible] 8-5-93				
Date				

DISTRIBUTION

By Originator: White, Green, Yellow, Pink – Property Management; Goldenrod – Retain

Shipping Operation – Sign all Copies and Forward to: White – Property Management; Yellow – Retain; Green – Property Control Custodian (Issuing Office); Pink – Originator

0024

001 001

BURLINGTON AIR EXPRESS

CORPORATE SUPPORT GROUP
18200 VON KARMAN AVE
IRVINE, CA 92715

93081515

970 892 484
AIRBILL NUMBER

DATE	ORIGIN	DEST. SORT CODE
08-05-93	PSC	

1
SHIPPER'S REFERENCE NO.: W12910 PB62F W93-0667#11
SHIPPER'S ACCOUNT NO.: 7011134104
COMPANY: LA GUERRA WESTINGHOUSE HANFORD
DEPT./FLOOR:
FROM (YOUR NAME): WESTINGHOUSE SHIPPING DEPT. (509) 376-6665
PHONE NO.:
STREET ADDRESS: 2355 STEVENS DR
CITY: RICHLAND STATE: WA ZIP (REQUIRED): 99352

2
CONSIGNEE'S REFERENCE NO:
CONSIGNEE'S ACCOUNT NO:
COMPANY: RF WESTON INC
DEPT./FLOOR: JOSIE KING
TO (CONSIGNEE NAME): RF WESTON INC
PHONE NO.:
ACCURATE STREET ADDRESS (BURLINGTON CANNOT DELIVER TO A P.O. BOX): 256 WELSH POOL ROAD
CITY: LIONVILLE STATE: PA ZIP (REQUIRED): 19341

3 C.O.D.
$
CONSIGNEE'S CHECK OK — MARK IF APPLICABLE ☐
[illegible]

DECLARED VALUE
$

LIMIT OF LIABILITY
LIABILITY IS AGREED AND UNDERSTOOD TO BE $50.00 OR $.50 PER POUND, WHICHEVER IS GREATER, UNLESS A HIGHER VALUE IS DECLARED AND APPLICABLE CHARGES PAID. SEE REVERSE SIDE OF AIRBILL, PARAGRAPH 8, FOR DECLARED VALUE LIMITATIONS

1-800-CALL-BAX FOR INFORMATION OR THE BAX OFFICE NEAREST YOU

4 BILLING INFORMATION
- [XX] PREPAID (SHIPPER) $ _____ CASH RECEIVED (PAID IN ADVANCE)
- [ ] COLLECT (CONSIGNEE)
- [ ] 3RD PARTY (ACCT. NO. OR BILLING ADDRESS REQ'D)

ACCOUNT NO.:
COMPANY/NAME:
STREET ADDRESS:
CITY: STATE: ZIP:

5 SERVICE REQUESTED
- [XX] OVERNIGHT (NEXT BUSINESS DAY)
- [ ] SECOND DAY
- [ ] NEXT FLIGHT OUT
- [ ] _____

CHECK BELOW IF PACKAGE IS:
- [ ] LETTER
- [ ] G.O.H. (GARMENT ON HANGER)

6 HANDLING INFORMATION (* SPECIAL RATE MAY APPLY)
- [ ] HOLD AT BAX
- [ ] *DANGEROUS GOODS
- [ ] *SATURDAY DELIVERY
- [ ] *SPECIAL DELIVERY
- [ ] *CONVENTION
- [ ] *GOVERNMENT SHIPMENT

SPECIAL INSTRUCTIONS / ADDITIONAL REFERENCE INFORMATION:

NO. OF PCS	WEIGHT	LENGTH	WIDTH	HEIGHT	DESCRIPTION
1	40				COOLER SML 178 SAMPLES W B08NQ8
TOTAL PCS 1	TOTAL WT 40				

_____ SKID(S) SAID TO CONTAIN _____ NO. OF PIECES

RATE QUOTE NUMBER:

RECEIVED BY BAX AT: [X] SHIPPER'S DOOR [ ] BAX TERMINAL

OUTSIDE CARRIER:
CHARGES ADVANCED: $
PRO NUMBER:
CARRIER NAME:

7
SIGNATURE OF SHIPPER: X
TIME/DATE OF PICK-UP: 15:8.5.93
DRIVER NO.:
RELEASE SIGNATURE (GIVES AUTHORITY TO BAX TO DELIVER SHIPMENT WITHOUT A DELIVERY SIGNATURE AS PER CONDITIONS ON REVERSE OF THIS PAGE): X
SIGNED FOR BAX: X

970 892 484
AIRBILL NUMBER

OP 100 (11-92)

NON-NEGOTIABLE AIRBILL SUBJECT TO TERMS AND CONDITIONS OF CONTRACT ON REVERSE SIDE

CONSIGNEE COPY

0025

WESTON Analytics Use Only

9308L515

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 2

Client: Westinghouse - Hanford
Est. Final Proj. Sampling Date:
Work Order #: 06168-002-001-9999-00
Project Contact/Phone #:
AD Project Manager: Josie Edwards
QC: CLP Del: CLP TAT: 35 DAY
Date Rec'd: 8/7/93 Date Due: 9/11/93
Account #: 8/6/93 WS-HANFORD

Refrigerator #										SUB	2	2							
#/Type Container	Liquid																		
	Solid									1 1/8G	1 1/8G	1							
Volume	Liquid																		
	Solid									250ml	250ml	1							
Preservatives										1	1	1							
ANALYSES REQUESTED →		ORGANIC								Radio Chem	INORG								
		VOA	BNA	Pest/PCB	Herb						Metal	CN							

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only													
S - Soil	001	B08YF8			S	7/30/93	1133														
SE - Sediment	002	B08YG0			S		1147														
SO - Solid	003	B08YG2			S		1259														
SL - Sludge	004	B08YG4			S		1305														
W - Water	005	B08YG5			S	8/2/93	1035														
O - Oil	006	B08YG6			S	8/2/93	1035														
A - Air	007	B08YG7			S	8/2/93	1121														
DS - Drum Solids	008	B08YG8			S	8/2/93	1140														
DL - Drum Liquids	009	B08YH3			S	8/2/93	1352														
L - EP/TCLP Leachate	010	B08YH4			S	8/2/93	1345														
WI - Wipe																					
X - Other																					
F - Fish																					

WESTON Analytics Use Only
9308L515

Custody Transfer Record/Lab Work Request

WESTON

Page 2 of 2

0027

Client: Westinghouse Hanford
Est. Final Proj. Sampling Date:
Work Order #: See page 1
Project Contact/Phone #:
AD Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #										SUB	2	2							
#/Type Container	Liquid																		
	Solid									1 AG	1 AG								
Volume	Liquid																		
	Solid									250ml	250ml								
Preservatives										—									
ANALYSES REQUESTED →		ORGANIC									INORG								
		VOA	BNA	Pest/PCB	Herb					SUB	Metal	CN							
		WESTON Analytics Use Only																	
										ISUB	MHSCRD	IONTO							

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ISUB	MHSCRD	IONTO
011	B08YH5			S	8/2/93	12:35	X	X	X
012	B08YH6			S	8/2/93	13:5	X	X	X
013	B08YJ1			S	8/4/93	09:42	X	X	X
014	B08YJ2			S	8/4/93	10:08	X	X	X
015	B08YJ3			S	8/4/93	10:26	X	X	X
016	B08YJ4			S	8/4/93	10:35	X	X	X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

See page 1

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Airborne	B Shuff	8/6/93	4:00 pm		B28 8/6/93		
	B28 8/6/93						

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ____ Cooler# ____ 381-596a

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B08YF8	Silver, Total	2.1	u	MG/KG	2.1	1.0
		Aluminum, Total	4330		MG/KG	41.6	1.0
		Arsenic, Total	2.1	u	MG/KG	2.1	1.0
		Barium, Total	72.9		MG/KG	41.6	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	3660		MG/KG	1040	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.4	u	MG/KG	10.4	1.0
		Chromium, Total	5.5		MG/KG	2.1	1.0
		Copper, Total	9.2		MG/KG	5.2	1.0
		Iron, Total	15300		MG/KG	20.8	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1040	u	MG/KG	1040	1.0
		Magnesium, Total	3300		MG/KG	1040	1.0
		Manganese, Total	285		MG/KG	3.1	1.0
		Sodium, Total	1040	u	MG/KG	1040	1.0
		Nickel, Total	8.3	u	MG/KG	8.3	1.0
		Lead, Total	3.4		MG/KG	0.62	1.0
		Antimony, Total	12.5	u	MG/KG	12.5	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.1	u	MG/KG	2.1	1.0
		Vanadium, Total	31.2		MG/KG	10.4	1.0
		Zinc, Total	29.1		MG/KG	4.2	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	B08YG0	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	4710		MG/KG	39.9	1.0
		Arsenic, Total	2.0	u	MG/KG	2.0	1.0
		Barium, Total	75.0		MG/KG	39.9	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	3170		MG/KG	997	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.0	u	MG/KG	10.0	1.0
		Chromium, Total	6.5		MG/KG	2.0	1.0
		Copper, Total	9.2		MG/KG	5.0	1.0
		Iron, Total	16700		MG/KG	19.9	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1280		MG/KG	997	1.0
		Magnesium, Total	3390		MG/KG	997	1.0
		Manganese, Total	317		MG/KG	3.0	1.0
		Sodium, Total	997	u	MG/KG	997	1.0
		Nickel, Total	8.0	u	MG/KG	8.0	1.0
		Lead, Total	4.2		MG/KG	0.61	1.0
		Antimony, Total	12.0	u	MG/KG	12.0	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	34.7		MG/KG	10.0	1.0
		Zinc, Total	30.9		MG/KG	4.0	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B08YG2	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	4430		MG/KG	39.1	1.0
		Arsenic, Total	2.1	u	MG/KG	2.1	1.0
		Barium, Total	73.2		MG/KG	39.1	1.0
		Beryllium, Total	0.98	u	MG/KG	0.98	1.0
		Calcium, Total	3770		MG/KG	978	1.0
		Cadmium, Total	0.98	u	MG/KG	0.98	1.0
		Cobalt, Total	9.8	u	MG/KG	9.8	1.0
		Chromium, Total	6.1		MG/KG	2.0	1.0
		Copper, Total	8.8		MG/KG	4.9	1.0
		Iron, Total	16100		MG/KG	19.6	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1130		MG/KG	978	1.0
		Magnesium, Total	3250		MG/KG	978	1.0
		Manganese, Total	306		MG/KG	2.9	1.0
		Sodium, Total	978	u	MG/KG	978	1.0
		Nickel, Total	7.8	u	MG/KG	7.8	1.0
		Lead, Total	3.9		MG/KG	0.62	1.0
		Antimony, Total	11.7	u	MG/KG	11.7	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.1	u	MG/KG	2.1	1.0
		Vanadium, Total	32.7		MG/KG	9.8	1.0
		Zinc, Total	30.2		MG/KG	3.9	1.0

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CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	B08YG4	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	5080		MG/KG	40.1	1.0
		Arsenic, Total	2.0	u	MG/KG	2.0	1.0
		Barium, Total	74.4		MG/KG	40.1	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	4310		MG/KG	1000	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.0		MG/KG	10.0	1.0
		Chromium, Total	6.8		MG/KG	2.0	1.0
		Copper, Total	10.3		MG/KG	5.0	1.0
		Iron, Total	18300		MG/KG	20.1	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1060		MG/KG	1000	1.0
		Magnesium, Total	3740		MG/KG	1000	1.0
		Manganese, Total	319		MG/KG	3.0	1.0
		Sodium, Total	1000	u	MG/KG	1000	1.0
		Nickel, Total	8.1		MG/KG	8.0	1.0
		Lead, Total	4.2		MG/KG	0.59	1.0
		Antimony, Total	12.0	u	MG/KG	12.0	1.0
		Selenium, Total	0.98	u	MG/KG	0.98	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	39.3		MG/KG	10.0	1.0
		Zinc, Total	33.4		MG/KG	4.0	1.0

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INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B08YG5	Silver, Total	2.1	u	MG/KG	2.1	1.0
		Aluminum, Total	4500		MG/KG	41.9	1.0
		Arsenic, Total	4.1		MG/KG	1.9	1.0
		Barium, Total	53.4		MG/KG	41.9	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	5570		MG/KG	1050	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.5	u	MG/KG	10.5	1.0
		Chromium, Total	5.8		MG/KG	2.1	1.0
		Copper, Total	8.9		MG/KG	5.2	1.0
		Iron, Total	18400		MG/KG	20.9	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1320		MG/KG	1050	1.0
		Magnesium, Total	4440		MG/KG	1050	1.0
		Manganese, Total	301		MG/KG	3.1	1.0
		Sodium, Total	1050	u	MG/KG	1050	1.0
		Nickel, Total	8.4	u	MG/KG	8.4	1.0
		Lead, Total	5.3		MG/KG	0.58	1.0
		Antimony, Total	12.6	u	MG/KG	12.6	1.0
		Selenium, Total	0.97	u	MG/KG	0.97	1.0
		Thallium, Total	1.9	u	MG/KG	1.9	1.0
		Vanadium, Total	40.9		MG/KG	10.5	1.0
		Zinc, Total	36.4		MG/KG	4.2	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	B08YG6	Silver, Total	2.2	u	MG/KG	2.2	1.0
		Aluminum, Total	4400		MG/KG	43.4	1.0
		Arsenic, Total	3.7		MG/KG	2.2	1.0
		Barium, Total	60.0		MG/KG	43.4	1.0
		Beryllium, Total	1.1	u	MG/KG	1.1	1.0
		Calcium, Total	5890		MG/KG	1080	1.0
		Cadmium, Total	1.1	u	MG/KG	1.1	1.0
		Cobalt, Total	10.9	u	MG/KG	10.9	1.0
		Chromium, Total	5.9		MG/KG	2.2	1.0
		Copper, Total	8.2		MG/KG	5.4	1.0
		Iron, Total	16100		MG/KG	21.7	1.0
		Mercury, Total	0.11	u	MG/KG	0.11	1.0
		Potassium, Total	1870		MG/KG	1080	1.0
		Magnesium, Total	4030		MG/KG	1080	1.0
		Manganese, Total	288		MG/KG	3.3	1.0
		Sodium, Total	1080	u	MG/KG	1080	1.0
		Nickel, Total	8.7	u	MG/KG	8.7	1.0
		Lead, Total	5.5		MG/KG	0.65	1.0
		Antimony, Total	13.0	u	MG/KG	13.0	1.0
		Selenium, Total	1.1	u	MG/KG	1.1	1.0
		Thallium, Total	2.2	u	MG/KG	2.2	1.0
		Vanadium, Total	34.2		MG/KG	10.9	1.0
		Zinc, Total	33.3		MG/KG	4.3	1.0

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CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B08YG7	Silver, Total	2.2	u	MG/KG	2.2	1.0
		Aluminum, Total	4410		MG/KG	44.4	1.0
		Arsenic, Total	2.9		MG/KG	2.2	1.0
		Barium, Total	65.0		MG/KG	44.4	1.0
		Beryllium, Total	1.1	u	MG/KG	1.1	1.0
		Calcium, Total	3760		MG/KG	1110	1.0
		Cadmium, Total	1.1	u	MG/KG	1.1	1.0
		Cobalt, Total	11.1	u	MG/KG	11.1	1.0
		Chromium, Total	5.7		MG/KG	2.2	1.0
		Copper, Total	8.3		MG/KG	5.6	1.0
		Iron, Total	15700		MG/KG	22.2	1.0
		Mercury, Total	0.11	u	MG/KG	0.11	1.0
		Potassium, Total	1900		MG/KG	1110	1.0
		Magnesium, Total	3710		MG/KG	1110	1.0
		Manganese, Total	300		MG/KG	3.3	1.0
		Sodium, Total	1110	u	MG/KG	1110	1.0
		Nickel, Total	8.9	u	MG/KG	8.9	1.0
		Lead, Total	6.4		MG/KG	0.65	1.0
		Antimony, Total	13.3	u	MG/KG	13.3	1.0
		Selenium, Total	1.1	u	MG/KG	1.1	1.0
		Thallium, Total	2.2	u	MG/KG	2.2	1.0
		Vanadium, Total	30.7		MG/KG	11.1	1.0
		Zinc, Total	33.7		MG/KG	4.4	1.0

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CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	B08YG8	Silver, Total	2.1	u	MG/KG	2.1	1.0
		Aluminum, Total	5470		MG/KG	42.4	1.0
		Arsenic, Total	2.9		MG/KG	2.2	1.0
		Barium, Total	71.5		MG/KG	42.4	1.0
		Beryllium, Total	1.1	u	MG/KG	1.1	1.0
		Calcium, Total	4880		MG/KG	1060	1.0
		Cadmium, Total	1.1	u	MG/KG	1.1	1.0
		Cobalt, Total	10.6	u	MG/KG	10.6	1.0
		Chromium, Total	6.6		MG/KG	2.1	1.0
		Copper, Total	9.7		MG/KG	5.3	1.0
		Iron, Total	18900		MG/KG	21.2	1.0
		Mercury, Total	0.11	u	MG/KG	0.11	1.0
		Potassium, Total	1720		MG/KG	1060	1.0
		Magnesium, Total	4310		MG/KG	1060	1.0
		Manganese, Total	319		MG/KG	3.2	1.0
		Sodium, Total	1060	u	MG/KG	1060	1.0
		Nickel, Total	8.5	u	MG/KG	8.5	1.0
		Lead, Total	5.0		MG/KG	0.65	1.0
		Antimony, Total	12.7	u	MG/KG	12.7	1.0
		Selenium, Total	1.1	u	MG/KG	1.1	1.0
		Thallium, Total	2.2	u	MG/KG	2.2	1.0
		Vanadium, Total	37.8		MG/KG	10.6	1.0
		Zinc, Total	46.1		MG/KG	4.2	1.0

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WESTON BATCH #: 9308L515

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	B08YH3	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	5000		MG/KG	39.4	1.0
		Arsenic, Total	2.4		MG/KG	2.0	1.0
		Barium, Total	79.7		MG/KG	39.4	1.0
		Beryllium, Total	0.98	u	MG/KG	0.98	1.0
		Calcium, Total	10600		MG/KG	984	1.0
		Cadmium, Total	0.98	u	MG/KG	0.98	1.0
		Cobalt, Total	12.9		MG/KG	9.8	1.0
		Chromium, Total	6.1		MG/KG	2.0	1.0
		Copper, Total	12.9		MG/KG	4.9	1.0
		Iron, Total	22800		MG/KG	19.7	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	984	u	MG/KG	984	1.0
		Magnesium, Total	4520		MG/KG	984	1.0
		Manganese, Total	376		MG/KG	3.0	1.0
		Sodium, Total	984	u	MG/KG	984	1.0
		Nickel, Total	7.9	u	MG/KG	7.9	1.0
		Lead, Total	3.7		MG/KG	0.60	1.0
		Antimony, Total	11.8	u	MG/KG	11.8	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	46.2		MG/KG	9.8	1.0
		Zinc, Total	38.2		MG/KG	3.9	1.0

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WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-010	B08YH4	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	5250		MG/KG	40.8	1.0
		Arsenic, Total	3.9		MG/KG	2.0	1.0
		Barium, Total	78.0		MG/KG	40.8	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	8290		MG/KG	1020	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.6		MG/KG	10.2	1.0
		Chromium, Total	6.4		MG/KG	2.0	1.0
		Copper, Total	10.7		MG/KG	5.1	1.0
		Iron, Total	20100		MG/KG	20.4	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1090		MG/KG	1020	1.0
		Magnesium, Total	4480		MG/KG	1020	1.0
		Manganese, Total	347		MG/KG	3.1	1.0
		Sodium, Total	1020	u	MG/KG	1020	1.0
		Nickel, Total	8.2	u	MG/KG	8.2	1.0
		Lead, Total	4.6		MG/KG	0.61	1.0
		Antimony, Total	12.2	u	MG/KG	12.2	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	42.6		MG/KG	10.2	1.0
		Zinc, Total	36.4		MG/KG	4.1	1.0

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	B08YH5	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	4270		MG/KG	39.1	1.0
		Arsenic, Total	5.0		MG/KG	2.0	1.0
		Barium, Total	69.8		MG/KG	39.1	1.0
		Beryllium, Total	0.98	u	MG/KG	0.98	1.0
		Calcium, Total	3870		MG/KG	978	1.0
		Cadmium, Total	0.98	u	MG/KG	0.98	1.0
		Cobalt, Total	9.8	u	MG/KG	9.8	1.0
		Chromium, Total	5.9		MG/KG	2.0	1.0
		Copper, Total	8.3		MG/KG	4.9	1.0
		Iron, Total	15600		MG/KG	19.6	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1250		MG/KG	978	1.0
		Magnesium, Total	3320		MG/KG	978	1.0
		Manganese, Total	303		MG/KG	2.9	1.0
		Sodium, Total	978	u	MG/KG	978	1.0
		Nickel, Total	7.8	u	MG/KG	7.8	1.0
		Lead, Total	11.8		MG/KG	0.61	1.0
		Antimony, Total	11.7	u	MG/KG	11.7	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	30.9		MG/KG	9.8	1.0
		Zinc, Total	31.2		MG/KG	3.9	1.0

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WESTON BATCH #: 9308L515

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-012	B08YH6	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	4940		MG/KG	40.6	1.0
		Arsenic, Total	2.1		MG/KG	2.0	1.0
		Barium, Total	74.6		MG/KG	40.6	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	3580		MG/KG	1020	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.2	u	MG/KG	10.2	1.0
		Chromium, Total	6.6		MG/KG	2.0	1.0
		Copper, Total	8.1		MG/KG	5.1	1.0
		Iron, Total	16300		MG/KG	20.3	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1480		MG/KG	1020	1.0
		Magnesium, Total	3570		MG/KG	1020	1.0
		Manganese, Total	302		MG/KG	3.0	1.0
		Sodium, Total	1020	u	MG/KG	1020	1.0
		Nickel, Total	8.1	u	MG/KG	8.1	1.0
		Lead, Total	6.0		MG/KG	0.59	1.0
		Antimony, Total	12.2	u	MG/KG	12.2	1.0
		Selenium, Total	0.99	u	MG/KG	0.99	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	32.1		MG/KG	10.2	1.0
		Zinc, Total	34.9		MG/KG	4.1	1.0

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WESTON BATCH #: 9308L515

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-013	B08YJ1	Silver, Total	2.3	u	MG/KG	2.3	1.0
		Aluminum, Total	5450		MG/KG	45.9	1.0
		Arsenic, Total	2.5	u	MG/KG	2.5	1.0
		Barium, Total	83.4		MG/KG	45.9	1.0
		Beryllium, Total	1.1	u	MG/KG	1.1	1.0
		Calcium, Total	4990		MG/KG	1150	1.0
		Cadmium, Total	1.1	u	MG/KG	1.1	1.0
		Cobalt, Total	11.5	u	MG/KG	11.5	1.0
		Chromium, Total	10.3		MG/KG	2.3	1.0
		Copper, Total	24.4		MG/KG	5.7	1.0
		Iron, Total	18800		MG/KG	22.9	1.0
		Mercury, Total	0.59		MG/KG	0.12	1.0
		Potassium, Total	1670		MG/KG	1150	1.0
		Magnesium, Total	4070		MG/KG	1150	1.0
		Manganese, Total	369		MG/KG	3.4	1.0
		Sodium, Total	1150	u	MG/KG	1150	1.0
		Nickel, Total	9.2	u	MG/KG	9.2	1.0
		Lead, Total	8.8		MG/KG	0.75	1.0
		Antimony, Total	13.8	u	MG/KG	13.8	1.0
		Selenium, Total	1.2	u	MG/KG	1.2	1.0
		Thallium, Total	2.5	u	MG/KG	2.5	1.0
		Vanadium, Total	38.1		MG/KG	11.5	1.0
		Zinc, Total	63.0		MG/KG	4.6	1.0

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WESTON BATCH #: 9308L515

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-014	B08YJ2	Silver, Total	2.2	u	MG/KG	2.2	1.0
		Aluminum, Total	4770		MG/KG	43.4	1.0
		Arsenic, Total	2.2	u	MG/KG	2.2	1.0
		Barium, Total	77.6		MG/KG	43.4	1.0
		Beryllium, Total	1.1	u	MG/KG	1.1	1.0
		Calcium, Total	3180		MG/KG	1090	1.0
		Cadmium, Total	1.1	u	MG/KG	1.1	1.0
		Cobalt, Total	10.9	u	MG/KG	10.9	1.0
		Chromium, Total	6.4		MG/KG	2.2	1.0
		Copper, Total	8.0		MG/KG	5.4	1.0
		Iron, Total	16600		MG/KG	21.7	1.0
		Mercury, Total	0.11	u	MG/KG	0.11	1.0
		Potassium, Total	1370		MG/KG	1090	1.0
		Magnesium, Total	3460		MG/KG	1090	1.0
		Manganese, Total	300		MG/KG	3.3	1.0
		Sodium, Total	1090	u	MG/KG	1090	1.0
		Nickel, Total	8.7	u	MG/KG	8.7	1.0
		Lead, Total	4.3		MG/KG	0.66	1.0
		Antimony, Total	13.0	u	MG/KG	13.0	1.0
		Selenium, Total	1.1	u	MG/KG	1.1	1.0
		Thallium, Total	2.2	u	MG/KG	2.2	1.0
		Vanadium, Total	35.0		MG/KG	10.9	1.0
		Zinc, Total	32.9		MG/KG	4.3	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-015	B08YJ3	Silver, Total	1.9	u	MG/KG	1.9	1.0
		Aluminum, Total	3400		MG/KG	38.0	1.0
		Arsenic, Total	2.0	u	MG/KG	2.0	1.0
		Barium, Total	56.8		MG/KG	38.0	1.0
		Beryllium, Total	0.95	u	MG/KG	0.95	1.0
		Calcium, Total	2740		MG/KG	950	1.0
		Cadmium, Total	0.95	u	MG/KG	0.95	1.0
		Cobalt, Total	9.5	u	MG/KG	9.5	1.0
		Chromium, Total	4.7		MG/KG	1.9	1.0
		Copper, Total	9.2		MG/KG	4.7	1.0
		Iron, Total	13500		MG/KG	19.0	1.0
		Mercury, Total	0.10	u	MG/KG	0.10	1.0
		Potassium, Total	1200		MG/KG	950	1.0
		Magnesium, Total	2820		MG/KG	950	1.0
		Manganese, Total	250		MG/KG	2.8	1.0
		Sodium, Total	950	u	MG/KG	950	1.0
		Nickel, Total	7.6	u	MG/KG	7.6	1.0
		Lead, Total	4.6		MG/KG	0.61	1.0
		Antimony, Total	11.4	u	MG/KG	11.4	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.0	u	MG/KG	2.0	1.0
		Vanadium, Total	25.8		MG/KG	9.5	1.0
		Zinc, Total	27.4		MG/KG	3.8	1.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 08/26/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9308L515

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-016	B0BYJ4	Silver, Total	2.0	u	MG/KG	2.0	1.0
		Aluminum, Total	4070		MG/KG	40.7	1.0
		Arsenic, Total	2.1	u	MG/KG	2.1	1.0
		Barium, Total	64.6		MG/KG	40.7	1.0
		Beryllium, Total	1.0	u	MG/KG	1.0	1.0
		Calcium, Total	4160		MG/KG	1020	1.0
		Cadmium, Total	1.0	u	MG/KG	1.0	1.0
		Cobalt, Total	10.2	u	MG/KG	10.2	1.0
		Chromium, Total	5.5		MG/KG	2.0	1.0
		Copper, Total	13.4		MG/KG	5.1	1.0
		Iron, Total	14200		MG/KG	20.3	1.0
		Mercury, Total	0.12		MG/KG	0.10	1.0
		Potassium, Total	1390		MG/KG	1020	1.0
		Magnesium, Total	3300		MG/KG	1020	1.0
		Manganese, Total	288		MG/KG	3.1	1.0
		Sodium, Total	1020	u	MG/KG	1020	1.0
		Nickel, Total	8.1	u	MG/KG	8.1	1.0
		Lead, Total	3.8		MG/KG	0.63	1.0
		Antimony, Total	12.2	u	MG/KG	12.2	1.0
		Selenium, Total	1.0	u	MG/KG	1.0	1.0
		Thallium, Total	2.1	u	MG/KG	2.1	1.0
		Vanadium, Total	28.9		MG/KG	10.2	1.0
		Zinc, Total	34.6		MG/KG	4.1	1.0

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YF8

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851501

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4330.00			P
7440-36-0	Antimony	9.77	U		P
7440-38-2	Arsenic	1.60	B		F
7440-39-3	Barium	72.90			P
7440-41-7	Beryllium	.37	B		P
7440-43-9	Cadmium	1.04	U		P
7440-70-2	Calcium	3660.00			P
7440-47-3	Chromium	5.50			P
7440-48-4	Cobalt	8.80	B		P
7440-50-8	Copper	9.20			P
7439-89-6	Iron	15300.00			P
7439-92-1	Lead	3.50		S*	F
7439-95-4	Magnesium	3300.00			P
7439-96-5	Manganese	285.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	7.00	B		P
7440-09-7	Potassium	976.00	B		P
7782-49-2	Selenium	.60	B	N	F
7440-22-4	Silver	1.25	U		P
7440-23-5	Sodium	105.00	B		P
7440-28-0	Thallium	.83	U		F
7440-62-2	Vanadium	31.20			P
7440-66-6	Zinc	29.10			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG0

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851502

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4710.00			P
7440-36-0	Antimony	9.37	U		P
7440-38-2	Arsenic	1.50	B		F
7440-39-3	Barium	75.00			P
7440-41-7	Beryllium	.40	B		P
7440-43-9	Cadmium	1.00	U		P
7440-70-2	Calcium	3170.00			P
7440-47-3	Chromium	6.50			P
7440-48-4	Cobalt	9.30	B		P
7440-50-8	Copper	9.20			P
7439-89-6	Iron	16700.00			P
7439-92-1	Lead	4.20		*+	F
7439-95-4	Magnesium	3390.00			P
7439-96-5	Manganese	317.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	6.50	B		P
7440-09-7	Potassium	1280.00			P
7782-49-2	Selenium	.41	U	N	F
7440-22-4	Silver	1.20	U		P
7440-23-5	Sodium	103.00	B		P
7440-28-0	Thallium	.82	U		F
7440-62-2	Vanadium	34.70			P
7440-66-6	Zinc	30.90			P
	Cyanide	1.03	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:
The Lead result is the better of the two MSA's.

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG2

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851503

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4430.00			P
7440-36-0	Antimony	9.19	U		P
7440-38-2	Arsenic	1.50	B		F
7440-39-3	Barium	73.20			P
7440-41-7	Beryllium	.35	B		P
7440-43-9	Cadmium	.98	U		P
7440-70-2	Calcium	3770.00			P
7440-47-3	Chromium	6.10			P
7440-48-4	Cobalt	9.40	B		P
7440-50-8	Copper	8.80			P
7439-89-6	Iron	16100.00			P
7439-92-1	Lead	3.90		S*	F
7439-95-4	Magnesium	3250.00			P
7439-96-5	Manganese	306.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	5.80	B		P
7440-09-7	Potassium	1130.00			P
7782-49-2	Selenium	.41	U	N	F
7440-22-4	Silver	1.17	U		P
7440-23-5	Sodium	84.90	B		P
7440-28-0	Thallium	.83	U		F
7440-62-2	Vanadium	32.70			P
7440-66-6	Zinc	30.20			P
	Cyanide	1.03	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851504

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5080.00			P
7440-36-0	Antimony	9.43	U		P
7440-38-2	Arsenic	1.50	B		F
7440-39-3	Barium	74.40			P
7440-41-7	Beryllium	.34	B		P
7440-43-9	Cadmium	1.00	U		P
7440-70-2	Calcium	4310.00			P
7440-47-3	Chromium	6.80			P
7440-48-4	Cobalt	10.00	B		P
7440-50-8	Copper	10.30			P
7439-89-6	Iron	18300.00			P
7439-92-1	Lead	4.20		S*	F
7439-95-4	Magnesium	3740.00			P
7439-96-5	Manganese	319.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	8.10			P
7440-09-7	Potassium	1060.00			P
7782-49-2	Selenium	.39	U	N	F
7440-22-4	Silver	1.20	U		P
7440-23-5	Sodium	109.00	B		P
7440-28-0	Thallium	.79	U		F
7440-62-2	Vanadium	39.30			P
7440-66-6	Zinc	33.40			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG5

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851505

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4500.00			P
7440-36-0	Antimony	9.84	U		P
7440-38-2	Arsenic	4.10			F
7440-39-3	Barium	53.40			P
7440-41-7	Beryllium	.42	B		P
7440-43-9	Cadmium	1.05	U		P
7440-70-2	Calcium	5570.00			P
7440-47-3	Chromium	5.80			P
7440-48-4	Cobalt	10.10	B		P
7440-50-8	Copper	8.90			P
7439-89-6	Iron	18400.00			P
7439-92-1	Lead	5.30		*+	F
7439-95-4	Magnesium	4440.00			P
7439-96-5	Manganese	301.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	5.50	B		P
7440-09-7	Potassium	1320.00			P
7782-49-2	Selenium	.39	U	N	F
7440-22-4	Silver	1.26	U		P
7440-23-5	Sodium	120.00	B		P
7440-28-0	Thallium	.78	U		F
7440-62-2	Vanadium	40.90			P
7440-66-6	Zinc	36.40			P
	Cyanide	1.05	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:
The Lead result is the better of the two MSA's.

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG6

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851506

Level (low/med): LOW Date Received: 8/06/93

% Solids: 88.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4400.00			P
7440-36-0	Antimony	10.20	U		P
7440-38-2	Arsenic	3.70			F
7440-39-3	Barium	60.00			P
7440-41-7	Beryllium	.39	B		P
7440-43-9	Cadmium	1.08	U		P
7440-70-2	Calcium	5890.00			P
7440-47-3	Chromium	5.90			P
7440-48-4	Cobalt	8.70	B		P
7440-50-8	Copper	8.20			P
7439-89-6	Iron	16100.00			P
7439-92-1	Lead	5.50		S*	F
7439-95-4	Magnesium	4030.00			P
7439-96-5	Manganese	288.00			P
7439-97-6	Mercury	.06	U		CV
7440-02-0	Nickel	5.30	B		P
7440-09-7	Potassium	1870.00			P
7782-49-2	Selenium	.43	U	N	F
7440-22-4	Silver	1.30	U		P
7440-23-5	Sodium	131.00	B		P
7440-28-0	Thallium	.86	U		F
7440-62-2	Vanadium	34.20			P
7440-66-6	Zinc	33.30			P
	Cyanide	1.13	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG7

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851507

Level (low/med): LOW Date Received: 8/06/93

% Solids: 87.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4410.00			P
7440-36-0	Antimony	10.40	U		P
7440-38-2	Arsenic	2.90			F
7440-39-3	Barium	65.00			P
7440-41-7	Beryllium	.42	B		P
7440-43-9	Cadmium	1.11	U		P
7440-70-2	Calcium	3760.00			P
7440-47-3	Chromium	5.70			P
7440-48-4	Cobalt	8.90	B		P
7440-50-8	Copper	8.30			P
7439-89-6	Iron	15700.00			P
7439-92-1	Lead	6.40		S*	F
7439-95-4	Magnesium	3710.00			P
7439-96-5	Manganese	300.00			P
7439-97-6	Mercury	.06	U		CV
7440-02-0	Nickel	5.00	B		P
7440-09-7	Potassium	1900.00			P
7782-49-2	Selenium	.72	B	N	F
7440-22-4	Silver	1.33	U		P
7440-23-5	Sodium	92.50	B		P
7440-28-0	Thallium	.87	U		F
7440-62-2	Vanadium	30.70			P
7440-66-6	Zinc	33.70			P
	Cyanide	1.14	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG8

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851508

Level (low/med): LOW Date Received: 8/06/93

% Solids: 89.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5470.00			P
7440-36-0	Antimony	9.97	U		P
7440-38-2	Arsenic	2.90			F
7440-39-3	Barium	71.50			P
7440-41-7	Beryllium	.42	B		P
7440-43-9	Cadmium	1.06	U		P
7440-70-2	Calcium	4880.00			P
7440-47-3	Chromium	6.60			P
7440-48-4	Cobalt	10.00	B		P
7440-50-8	Copper	9.70			P
7439-89-6	Iron	18900.00			P
7439-92-1	Lead	5.00		S*	F
7439-95-4	Magnesium	4310.00			P
7439-96-5	Manganese	319.00			P
7439-97-6	Mercury	.06	U		CV
7440-02-0	Nickel	6.00	B		P
7440-09-7	Potassium	1720.00			P
7782-49-2	Selenium	.43	U	WN	F
7440-22-4	Silver	1.27	U		P
7440-23-5	Sodium	146.00	B		P
7440-28-0	Thallium	.86	U		F
7440-62-2	Vanadium	37.80			P
7440-66-6	Zinc	46.10			P
	Cyanide	1.12	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH3

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851509

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5000.00			P
7440-36-0	Antimony	9.25	U		P
7440-38-2	Arsenic	2.40			F
7440-39-3	Barium	79.70			P
7440-41-7	Beryllium	.41	B		P
7440-43-9	Cadmium	.98	U		P
7440-70-2	Calcium	10600.00			P
7440-47-3	Chromium	6.10			P
7440-48-4	Cobalt	12.90			P
7440-50-8	Copper	12.90			P
7439-89-6	Iron	22800.00			P
7439-92-1	Lead	3.70		S*	F
7439-95-4	Magnesium	4520.00			P
7439-96-5	Manganese	376.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	7.00	B		P
7440-09-7	Potassium	836.00	B		P
7782-49-2	Selenium	.40	U	N	F
7440-22-4	Silver	1.18	U		P
7440-23-5	Sodium	194.00	B		P
7440-28-0	Thallium	.80	U		F
7440-62-2	Vanadium	46.20			P
7440-66-6	Zinc	38.20			P
	Cyanide	1.02	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851510

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5250.00			P
7440-36-0	Antimony	9.59	U		P
7440-38-2	Arsenic	3.90			F
7440-39-3	Barium	78.00			P
7440-41-7	Beryllium	.35	B		P
7440-43-9	Cadmium	1.02	U		P
7440-70-2	Calcium	8290.00			P
7440-47-3	Chromium	6.40			P
7440-48-4	Cobalt	10.60			P
7440-50-8	Copper	10.70			P
7439-89-6	Iron	20100.00			P
7439-92-1	Lead	4.60		S*	F
7439-95-4	Magnesium	4480.00			P
7439-96-5	Manganese	347.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	7.40	B		P
7440-09-7	Potassium	1090.00			P
7782-49-2	Selenium	.41	U	N	F
7440-22-4	Silver	1.22	U		P
7440-23-5	Sodium	138.00	B		P
7440-28-0	Thallium	.81	U		F
7440-62-2	Vanadium	42.60			P
7440-66-6	Zinc	36.40			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH5

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851511

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.0

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	9.19	U		P
7440-38-2	Arsenic	5.00			F
7440-39-3	Barium	69.80			P
7440-41-7	Beryllium	.41	B		P
7440-43-9	Cadmium	.98	U		P
7440-70-2	Calcium	3870.00			P
7440-47-3	Chromium	5.90			P
7440-48-4	Cobalt	8.60	B		P
7440-50-8	Copper	8.30			P
7439-89-6	Iron	15600.00			P
7439-92-1	Lead	11.80		S*	F
7439-95-4	Magnesium	3320.00			P
7439-96-5	Manganese	303.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	5.50	B		P
7440-09-7	Potassium	1250.00			P
7782-49-2	Selenium	.40	U	N	F
7440-22-4	Silver	1.30	B		P
7440-23-5	Sodium	86.10	B		P
7440-28-0	Thallium	.81	U		F
7440-62-2	Vanadium	30.90			P
7440-66-6	Zinc	31.20			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH6

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851512

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4940.00			P
7440-36-0	Antimony	9.55	U		P
7440-38-2	Arsenic	2.10			F
7440-39-3	Barium	74.60			P
7440-41-7	Beryllium	.43	B		P
7440-43-9	Cadmium	1.02	U		P
7440-70-2	Calcium	3580.00			P
7440-47-3	Chromium	6.60			P
7440-48-4	Cobalt	8.40	B		P
7440-50-8	Copper	8.10			P
7439-89-6	Iron	16300.00			P
7439-92-1	Lead	6.00		S*	F
7439-95-4	Magnesium	3570.00			P
7439-96-5	Manganese	302.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	5.80	B		P
7440-09-7	Potassium	1480.00			P
7782-49-2	Selenium	.39	U	N	F
7440-22-4	Silver	1.22	U		P
7440-23-5	Sodium	118.00	B		P
7440-28-0	Thallium	.79	U		F
7440-62-2	Vanadium	32.10			P
7440-66-6	Zinc	34.90			P
	Cyanide	1.05	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ1

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851513

Level (low/med): LOW Date Received: 8/06/93

% Solids: 80.1

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5450.00			P
7440-36-0	Antimony	10.80	U		P
7440-38-2	Arsenic	1.70	B		F
7440-39-3	Barium	83.40			P
7440-41-7	Beryllium	.41	B		P
7440-43-9	Cadmium	1.15	U		P
7440-70-2	Calcium	4990.00			P
7440-47-3	Chromium	10.30			P
7440-48-4	Cobalt	9.70	B		P
7440-50-8	Copper	24.40			P
7439-89-6	Iron	18800.00			P
7439-92-1	Lead	8.80		S*	F
7439-95-4	Magnesium	4070.00			P
7439-96-5	Manganese	369.00			P
7439-97-6	Mercury	.59			CV
7440-02-0	Nickel	8.10	B		P
7440-09-7	Potassium	1670.00			P
7782-49-2	Selenium	.50	U	N	F
7440-22-4	Silver	1.70	B		P
7440-23-5	Sodium	124.00	B		P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	38.10			P
7440-66-6	Zinc	63.00			P
	Cyanide	1.25	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ2

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851514

Level (low/med): LOW Date Received: 8/06/93

% Solids: 89.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4770.00			P
7440-36-0	Antimony	10.20	U		P
7440-38-2	Arsenic	1.50	B		F
7440-39-3	Barium	77.60			P
7440-41-7	Beryllium	.39	B		P
7440-43-9	Cadmium	1.09	U		P
7440-70-2	Calcium	3180.00			P
7440-47-3	Chromium	6.40			P
7440-48-4	Cobalt	9.20	B		P
7440-50-8	Copper	8.00			P
7439-89-6	Iron	16600.00			P
7439-92-1	Lead	4.30		S*	F
7439-95-4	Magnesium	3460.00			P
7439-96-5	Manganese	300.00			P
7439-97-6	Mercury	.06	U		CV
7440-02-0	Nickel	7.30	B		P
7440-09-7	Potassium	1370.00			P
7782-49-2	Selenium	.44	U	N	F
7440-22-4	Silver	1.60	B		P
7440-23-5	Sodium	98.70	B		P
7440-28-0	Thallium	.88	U		F
7440-62-2	Vanadium	35.00			P
7440-66-6	Zinc	32.90			P
	Cyanide	1.12	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ3

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851515

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3400.00			P
7440-36-0	Antimony	8.93	U		P
7440-38-2	Arsenic	1.10	B		F
7440-39-3	Barium	56.80			P
7440-41-7	Beryllium	.30	B		P
7440-43-9	Cadmium	.95	U		P
7440-70-2	Calcium	2740.00			P
7440-47-3	Chromium	4.70			P
7440-48-4	Cobalt	7.30	B		P
7440-50-8	Copper	9.20			P
7439-89-6	Iron	13500.00			P
7439-92-1	Lead	4.60		S*	F
7439-95-4	Magnesium	2820.00			P
7439-96-5	Manganese	250.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	6.40	B		P
7440-09-7	Potassium	1200.00			P
7782-49-2	Selenium	.41	U	N	F
7440-22-4	Silver	1.14	U		P
7440-23-5	Sodium	88.20	B		P
7440-28-0	Thallium	.81	U		F
7440-62-2	Vanadium	25.80			P
7440-66-6	Zinc	27.40			P
	Cyanide	1.02	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851516

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4070.00			P
7440-36-0	Antimony	9.56	U		P
7440-38-2	Arsenic	1.30	B		F
7440-39-3	Barium	64.60			P
7440-41-7	Beryllium	.37	B		P
7440-43-9	Cadmium	1.02	U		P
7440-70-2	Calcium	4160.00			P
7440-47-3	Chromium	5.50			P
7440-48-4	Cobalt	8.30	B		P
7440-50-8	Copper	13.40			P
7439-89-6	Iron	14200.00			P
7439-92-1	Lead	3.80		S*	F
7439-95-4	Magnesium	3300.00			P
7439-96-5	Manganese	288.00			P
7439-97-6	Mercury	.12			CV
7440-02-0	Nickel	6.40	B		P
7440-09-7	Potassium	1390.00			P
7782-49-2	Selenium	.42	U	WN	F
7440-22-4	Silver	1.22	U		P
7440-23-5	Sodium	122.00	B		P
7440-28-0	Thallium	.83	U	W	F
7440-62-2	Vanadium	28.90			P
7440-66-6	Zinc	34.60			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

VALIDATION SUMMARY

RECEIVED
FEB 4 1994
VALIDATION DOCUMENTATION
SDLA

MEMORANDUM

TO: 200 Area Biota Project QA Record February 2, 1994

FR: Christina Jensen, Golder Associates Inc.

RE: METALS ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9308L515-WES-1224 (923-E416)

INTRODUCTION

This memorandum presents the results of data validation on data package 9308L515-WES-1224 consisting of sixteen soil samples analyzed for CLP Target Analyte List (TAL) metals. The samples were analyzed by the Weston Analytics laboratory of Lionville, Pennsylvania using WHC approved methods for TAL metals. A list of the samples validated is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA	ANALYSIS
B08YF8	07/30/93	SOIL	SEE NOTE 1
B08YG0	07/30/93	SOIL	
B08YG2	07/30/93	SOIL	
B08YG4	07/30/93	SOIL	
B08YG5*	08/02/93	SOIL	
B08YG6	08/02/93	SOIL	
B08YG7	08/02/93	SOIL	
B08YG8	08/02/93	SOIL	
B08YH3	08/02/93	SOIL	
B08YH4*	08/02/93	SOIL	
B08YH5	08/02/93	SOIL	
B08YH6	08/02/93	SOIL	
B08YJ1	08/04/93	SOIL	
B08YJ2	08/04/93	SOIL	
B08YJ3	08/04/93	SOIL	
B08YJ4	08/04/93	SOIL	

FEB 1994
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TQO

Notes:
* Indicates sample which received 100% validation.
1. All soil samples were analyzed for CLP TAL metals.

Data validation was conducted in accordance with the WHC statement of work (WHC 1993) and validation procedures (WHC 1992). Attachments 1 through 5 provide the following information as indicated below:

Attachment 1. Glossary of Data Reporting Qualifiers
Attachment 2. Summary of Data Qualifications
Attachment 3. Qualified Data Summary and Annotated Laboratory Reports
Attachment 4. Laboratory Narrative and Chain-of-Custody Documentation
Attachment 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met with the exception of the GFAA analytical spike and matrix spike recoveries as discussed under "Minor Deficiencies" below.

Sample Result Verification. All sample results were supported in the raw data.

Detection Limits. Detection limit goals were met for all analyses.

Completeness. The data package was complete for all requested analyses. A total of sixteen samples were validated in this data package with a total of 384 determinations reported, all of which were deemed valid. This results in a completness of 100 percent which meets normal work plan objectives of 90%.

MAJOR DEFICIENCIES

No major deficiencies were identified during data validation which required qualification of data as unusable.

MINOR DEFICIENCIES

The following minor deficiencies were identified during validation which required qualification of data.

Laboratory Blanks

- Beryllium and selenium were detected in the initial calibration blanks at negative concentrations. Therefore, associated sample results have been qualified as estimated (BJ, UJ) as shown in Attachment 2.

- Sodium was detected in an initial calibration blank, therefore, associated sample results for sodium have been qualified as undetected (U) as shown in Attachment 2.

- Selenium was detected a preparation blank at a concentration greater than the CRDL. Therefore, associated results have been qualified as undetected (U) as shown in Attachment 2.

Matrix Spikes

- The matrix spike percent recovery (%R) for selenium was below the control limit of 75%. Therefore, all selenium results have been qualified as estimated (UJ).

Method of Standard Addition

- The correlation coefficient (r) for lead was less than 0.995 for samples B08YG5 and B08YG0. Therefore, the lead results for the indicated samples have been qualified as estimated (J).

GFAA Analytical Spikes

- The GFAA analytical spikes for selenium were out of the control limits of 85% to 115%. Therefore, selenium results for samples B08YG2 and B08YJ4 have been qualified as estimated (UJ).
- The GFAA analytical spikes for thallium were out of the control limits of 85% to 115%. Therefore, thallium results for sample B08YG6 has been qualified as estimated (UJ).

REFERENCES

WHC 1993, Validation of 200 Area Biota Data, Statement of Work, Analytical Laboratory Data Validation, Task Order S-94-16, December 14, 1993, Purchase Order M073750. Westinghouse Hanford Company, Richland, Washington.

WHC 1992, Westinghouse Hanford Company, Data Validation Procedures for Chemical Analyses, WHC-SD-EN-SPP-002, Rev. 1, 1992. Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the constituent was analyzed for and detected. The concentration reported is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). The associated data should be considered usable for decision making purposes.

U - Indicates the constituent was analyzed for and not detected. The concentration reported is the sample detection limit corrected for aliquot size, dilution and percent solids (in the case of solid matrices) by the laboratory. The associated data should be considered usable for decision making purposes.

UJ - Indicates the constituent was analyzed for and not detected. Due to a minor quality control deficiency identified during data validation the concentration may not accurately reflect the sample detection limit. The associated data have been qualified as estimated but should be considered usable for decision making purposes.

BJ - Indicates the constituent was analyzed for and detected at a concentration less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL). Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

J - Indicates the constituent was analyzed for and detected. Due to a minor quality control deficiency identified during data validation the associated data have been qualified as estimated, but should be considered usable for decision making purposes.

UR - Indicates the constituent was analyzed for and not detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

R - Indicates the constituent was analyzed for and detected. Due to a major quality control deficiency identified during data validation, the associated data have been qualified as unusable for decision making purposes.

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY - FORM B-7

SDG:	REVIEWER: CJ	DATE: 2/2/94	PAGE 1 OF 1
COMMENTS: Metals pkg 9308U575-WES-1224			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Be	BJ	B08YJ4	neg. ICB
Se	J/UJ	all	neg ICB
Na	U	B08YG2, B08YG7	POS ICB
↓	↓	B08YH5, B08YJ2	↓
↓	↓	B08YJ3	↓
Se	U	B08YF8, B08YG7	PBLK > CRDL
Se	J/UJ	all	MS% R < 75
Pb	J	B08YG5, B08YG0	MSA r < .995
Se	UJ	B08YG2, B08YJ4	GFAA spike out
Tl	UJ	B08YG6	GFAA spike out

ATTACHMENT 3

QUALIFIED DATA SUMMARY AND

ANNOTATED LABORATORY RESULTS

Validated Data Summary, Data Package: 9308L515-WES-1224

	Samp#	B08YF8		B08YG0		B08YG2		B08YG4		B08YG5		B08YG6	
	Date	7-30-93		7-30-93		7-30-93		7-30-93		8-2-93		8-2-93	
	Location	216-U-11		216-U-11		216-U-11		216-U-11		216-B-3		216-B-3	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	4330.000		4710.000		4430.000		5080.000		4500.000		4400.000	
ANTIMONY	MG/KG	9.770	U	9.370	U	9.190	U	9.430	U	9.840	U	10.200	U
ARSENIC	MG/KG	1.600	B	1.500	B	1.500	B	1.500	B	4.100		3.700	
BARIUM	MG/KG	72.900		75.000		73.200		74.400		53.400		60.000	
BERYLLIUM	MG/KG	0.370	B	0.400	B	0.350	B	0.340	B	0.420	B	0.390	B
CADMIUM	MG/KG	1.040	U	1.000	U	0.980	U	1.000	U	1.050	U	1.080	U
CALCIUM	MG/KG	3660.000		3170.000		3770.000		4310.000		5570.000		5890.000	
CHROMIUM	MG/KG	5.500		6.500		6.100		6.800		5.800		5.900	
COBALT	MG/KG	8.800	B	9.300	B	9.400	B	10.000	B	10.100	B	8.700	B
COPPER	MG/KG	9.200		9.200		8.800		10.300		8.900		8.200	
IRON	MG/KG	15300.000		16700.000		16100.000		18300.000		18400.000		16100.000	
LEAD	MG/KG	3.500		4.200	J	3.900		4.200		5.300	J	5.500	
MAGNESIUM	MG/KG	3300.000		3390.000		3250.000		3740.000		4440.000		4030.000	
MANGANESE	MG/KG	285.000		317.000		306.000		319.000		301.000		288.000	
MERCURY	MG/KG	0.050	U	0.050	U	0.050	U	0.050	U	0.050	U	0.060	U
NICKEL	MG/KG	7.000	B	6.500	B	5.800	B	8.100		5.500	B	5.300	B
POTASSIUM	MG/KG	976.000	B	1280.000		1130.000		1060.000		1320.000		1870.000	
SELENIUM	MG/KG	0.600	UJ	0.410	UJ	0.410	UJ	0.390	UJ	0.390	UJ	0.430	UJ
SILVER	MG/KG	1.250	U	1.200	U	1.170	U	1.200	U	1.260	U	1.300	U
SODIUM	MG/KG	105.000	B	103.000	B	84.900	U	109.000	B	120.000	B	131.000	B
THALLIUM	MG/KG	0.830	U	0.820	U	0.830	U	0.790	U	0.780	U	0.860	UJ
VANADIUM	MG/KG	31.200		34.700		32.700		39.300		40.900		34.200	
ZINC	MG/KG	29.100		30.900		30.200		33.400		36.400		33.300	
CYANIDE	MG/KG	1.040	U	1.030	U	1.030	U	1.040	U	1.050	U	1.130	U

Verified
Cyanide

Validated Data Summary, Data Package: 9308L515-WES-1224

	Samp#	B08YG7		B08YG8		B08YH3		B08YH4		B08YH5		B08YH6	
	Date	8-2-93		8-2-93		8-2-93		8-2-93		8-2-93		8-2-93	
	Location	216-B-3		216-B-3		216-A-24		216-A-24		216-A-24		216-A-24	
	Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	4410.000		5470.000		5000.000		5250.000		4270.000		4940.000	
ANTIMONY	MG/KG	10.400	U	9.970	U	9.250	U	9.590	U	9.190	U	9.550	U
ARSENIC	MG/KG	2.900		2.900		2.400		3.900		5.000		2.100	
BARIUM	MG/KG	65.000		71.500		79.700		78.000		69.800		74.600	
BERYLLIUM	MG/KG	0.420	B	0.420	B	0.410	B	0.350	B	0.410	B	0.430	B
CADMIUM	MG/KG	1.110	U	1.060	U	0.980	U	1.020	U	0.980	U	1.020	U
CALCIUM	MG/KG	3760.000		4880.000		10600.000		8290.000		3870.000		3580.000	
CHROMIUM	MG/KG	5.700		6.600		6.100		6.400		5.900		6.600	
COBALT	MG/KG	8.900	B	10.000	B	12.900		10.600		8.600	B	8.400	B
COPPER	MG/KG	8.300		9.700		12.900		10.700		8.300		8.100	
IRON	MG/KG	15700.000		18900.000		22800.000		20100.000		15600.000		16300.000	
LEAD	MG/KG	6.400		5.000		3.700		4.600		11.800		6.000	
MAGNESIUM	MG/KG	3710.000		4310.000		4520.000		4480.000		3320.000		3570.000	
MANGANESE	MG/KG	300.000		319.000		376.000		347.000		303.000		302.000	
MERCURY	MG/KG	0.060	U	0.060	U	0.050	U	0.050	U	0.050	U	0.050	U
NICKEL	MG/KG	5.000	B	6.000	B	7.000	B	7.400	B	5.500	B	5.800	B
POTASSIUM	MG/KG	1900.000		1720.000		836.000	B	1090.000		1250.000		1480.000	
SELENIUM	MG/KG	0.720	UJ	0.430	UJ	0.400	UJ	0.410	UJ	0.400	UJ	0.390	UJ
SILVER	MG/KG	1.330	U	1.270	U	1.180	U	1.220	U	1.300	B	1.220	U
SODIUM	MG/KG	92.500	U	146.000	B	194.000	B	138.000	B	86.100	U	118.000	B
THALLIUM	MG/KG	0.870	U	0.860	U	0.800	U	0.810	U	0.810	U	0.790	U
VANADIUM	MG/KG	30.700		37.800		46.200		42.600		30.900		32.100	
ZINC	MG/KG	33.700		46.100		38.200		36.400		31.200		34.900	
CYANIDE	MG/KG	1.140	U	1.120	U	1.020	U	1.040	U	1.040	U	1.050	U

Verified 010
6/24/94

Validated Data Summary, Data Package: 9308L515-WES-1224

	Samp#	B08YJ1		B08YJ2		B08YJ3		B08YJ4	
	Date	8-4-93		8-4-93		8-4-93		8-4-93	
	Location	216-T-4		216-T-4		216-T-4		216-T-4	
	Type	SOIL		SOIL		SOIL		SOIL	
Parameter	Units	Result	Q	Result	Q	Result	Q	Result	Q
ALUMINUM	MG/KG	5450.000		4770.000		3400.000		4070.000	
ANTIMONY	MG/KG	10.800	U	10.200	U	8.930	U	9.560	U
ARSENIC	MG/KG	1.700	B	1.500	B	1.100	B	1.300	B
BARIUM	MG/KG	83.400		77.600		56.800		64.600	
BERYLLIUM	MG/KG	0.410	B	0.390	B	0.300	B	0.370	BJ
CADMIUM	MG/KG	1.150	U	1.090	U	0.950	U	1.020	U
CALCIUM	MG/KG	4990.000		3180.000		2740.000		4160.000	
CHROMIUM	MG/KG	10.300		6.400		4.700		5.500	
COBALT	MG/KG	9.700	B	9.200	B	7.300	B	8.300	B
COPPER	MG/KG	24.400		8.000		9.200		13.400	
IRON	MG/KG	18800.000		16600.000		13500.000		14200.000	
LEAD	MG/KG	8.800		4.300		4.600		3.800	
MAGNESIUM	MG/KG	4070.000		3460.000		2820.000		3300.000	
MANGANESE	MG/KG	369.000		300.000		250.000		288.000	
MERCURY	MG/KG	0.590		0.060	U	0.050	U	0.120	
NICKEL	MG/KG	8.100	B	7.300	B	6.400	B	6.400	B
POTASSIUM	MG/KG	1670.000		1370.000		1200.000		1390.000	
SELENIUM	MG/KG	0.500	UJ	0.440	UJ	0.410	UJ	0.420	UJ
SILVER	MG/KG	1.700	B	1.600	B	1.140	U	1.220	U
SODIUM	MG/KG	124.000	B	98.700	U	88.200	U	122.000	B
THALLIUM	MG/KG	1.000	U	0.880	U	0.810	U	0.830	U
VANADIUM	MG/KG	38.100		35.000		25.800		28.900	
ZINC	MG/KG	63.000		32.900		27.400		34.600	
CYANIDE	MG/KG	1.250	U	1.120	U	1.020	U	1.040	U

Verified 2/19/94 S

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YF8

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851501

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4330.00			P
7440-36-0	Antimony	9.77	U		P
7440-38-2	Arsenic	1.60	B		F
7440-39-3	Barium	72.90			P
7440-41-7	Beryllium	.37	B		P
7440-43-9	Cadmium	1.04	U		P
7440-70-2	Calcium	3660.00			P
7440-47-3	Chromium	5.50			P
7440-48-4	Cobalt	8.80	B		P
7440-50-8	Copper	9.20			P
7439-89-6	Iron	15300.00			P
7439-92-1	Lead	3.50		S*	F
7439-95-4	Magnesium	3300.00			P
7439-96-5	Manganese	285.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	7.00	B		P
7440-09-7	Potassium	976.00	B		P
7782-49-2	Selenium	.60	~~B~~	N	F
7440-22-4	Silver	1.25	U		P
7440-23-5	Sodium	105.00	B		P
7440-28-0	Thallium	.83	U		F
7440-62-2	Vanadium	31.20			P
7440-66-6	Zinc	29.10			P
	Cyanide	1.04	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG0

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851502

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.5

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4710.00			P	
7440-36-0	Antimony	9.37	U		P	
7440-38-2	Arsenic	1.50	B		F	
7440-39-3	Barium	75.00			P	
7440-41-7	Beryllium	.40	B		P	
7440-43-9	Cadmium	1.00	U		P	
7440-70-2	Calcium	3170.00			P	
7440-47-3	Chromium	6.50			P	
7440-48-4	Cobalt	9.30	B		P	
7440-50-8	Copper	9.20			P	
7439-89-6	Iron	16700.00			P	
7439-92-1	Lead	4.20	—	*+	F	J
7439-95-4	Magnesium	3390.00			P	
7439-96-5	Manganese	317.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	6.50	B		P	
7440-09-7	Potassium	1280.00			P	
7782-49-2	Selenium	.41	~~U~~	N	F	UJ
7440-22-4	Silver	1.20	U		P	
7440-23-5	Sodium	103.00	B		P	
7440-28-0	Thallium	.82	U		F	
7440-62-2	Vanadium	34.70			P	
7440-66-6	Zinc	30.90			P	
	Cyanide	1.03	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:
The Lead result is the better of the two MSA's.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG2

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851503

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4430.00			P	
7440-36-0	Antimony	9.19	U		P	
7440-38-2	Arsenic	1.50	B		F	
7440-39-3	Barium	73.20			P	
7440-41-7	Beryllium	.35	B		P	
7440-43-9	Cadmium	.98	U		P	
7440-70-2	Calcium	3770.00			P	
7440-47-3	Chromium	6.10			P	
7440-48-4	Cobalt	9.40	B		P	
7440-50-8	Copper	8.80			P	
7439-89-6	Iron	16100.00			P	
7439-92-1	Lead	3.90		S*	F	
7439-95-4	Magnesium	3250.00			P	
7439-96-5	Manganese	306.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	5.80	B		P	
7440-09-7	Potassium	1130.00			P	
7782-49-2	Selenium	.41	~~U~~	N	F	UJ
7440-22-4	Silver	1.17	U		P	
7440-23-5	Sodium	84.90	~~B~~		P	U
7440-28-0	Thallium	.83	U		F	
7440-62-2	Vanadium	32.70			P	
7440-66-6	Zinc	30.20			P	
	Cyanide	1.03	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851504

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5080.00			P
7440-36-0	Antimony	9.43	U		P
7440-38-2	Arsenic	1.50	B		F
7440-39-3	Barium	74.40			P
7440-41-7	Beryllium	.34	B		P
7440-43-9	Cadmium	1.00	U		P
7440-70-2	Calcium	4310.00			P
7440-47-3	Chromium	6.80			P
7440-48-4	Cobalt	10.00	B		P
7440-50-8	Copper	10.30			P
7439-89-6	Iron	18300.00			P
7439-92-1	Lead	4.20		S*	F
7439-95-4	Magnesium	3740.00			P
7439-96-5	Manganese	319.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	8.10			P
7440-09-7	Potassium	1060.00			P
7782-49-2	Selenium	.39	~~U~~	N	F
7440-22-4	Silver	1.20	U		P
7440-23-5	Sodium	109.00	B		P
7440-28-0	Thallium	.79	U		F
7440-62-2	Vanadium	39.30			P
7440-66-6	Zinc	33.40			P
	Cyanide	1.04	U		C

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Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG5

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851505

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.5

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4500.00			P	
7440-36-0	Antimony	9.84	U		P	
7440-38-2	Arsenic	4.10			F	
7440-39-3	Barium	53.40			P	
7440-41-7	Beryllium	.42	B		P	
7440-43-9	Cadmium	1.05	U		P	
7440-70-2	Calcium	5570.00			P	
7440-47-3	Chromium	5.80			P	
7440-48-4	Cobalt	10.10	B		P	
7440-50-8	Copper	8.90			P	
7439-89-6	Iron	18400.00			P	
7439-92-1	Lead	5.30		*+	F	J
7439-95-4	Magnesium	4440.00			P	
7439-96-5	Manganese	301.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	5.50	B		P	
7440-09-7	Potassium	1320.00			P	
7782-49-2	Selenium	.39	~~U~~	N	F	UJ
7440-22-4	Silver	1.26	U		P	
7440-23-5	Sodium	120.00	B		P	
7440-28-0	Thallium	.78	U		F	
7440-62-2	Vanadium	40.90			P	
7440-66-6	Zinc	36.40			P	
	Cyanide	1.05	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:
The Lead result is the better of the two MSA's.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG6

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851506

Level (low/med): LOW Date Received: 8/06/93

% Solids: 88.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4400.00			P	
7440-36-0	Antimony	10.20	U		P	
7440-38-2	Arsenic	3.70			F	
7440-39-3	Barium	60.00			P	
7440-41-7	Beryllium	.39	B		P	
7440-43-9	Cadmium	1.08	U		P	
7440-70-2	Calcium	5890.00			P	
7440-47-3	Chromium	5.90			P	
7440-48-4	Cobalt	8.70	B		P	
7440-50-8	Copper	8.20			P	
7439-89-6	Iron	16100.00			P	
7439-92-1	Lead	5.50		S*	F	
7439-95-4	Magnesium	4030.00			P	
7439-96-5	Manganese	288.00			P	
7439-97-6	Mercury	.06	U		CV	
7440-02-0	Nickel	5.30	B		P	
7440-09-7	Potassium	1870.00			P	
7782-49-2	Selenium	.43	~~U~~	N	F	UJ
7440-22-4	Silver	1.30	U		P	
7440-23-5	Sodium	131.00	B		P	
7440-28-0	Thallium	.86	~~U~~		F	UJ
7440-62-2	Vanadium	34.20			P	
7440-66-6	Zinc	33.30			P	
	Cyanide	1.13	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG7

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851507

Level (low/med): LOW Date Received: 8/06/93

% Solids: 87.6

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4410.00			P	
7440-36-0	Antimony	10.40	U		P	
7440-38-2	Arsenic	2.90			F	
7440-39-3	Barium	65.00			P	
7440-41-7	Beryllium	.42	B		P	
7440-43-9	Cadmium	1.11	U		P	
7440-70-2	Calcium	3760.00			P	
7440-47-3	Chromium	5.70			P	
7440-48-4	Cobalt	8.90	B		P	
7440-50-8	Copper	8.30			P	
7439-89-6	Iron	15700.00			P	
7439-92-1	Lead	6.40		S*	F	
7439-95-4	Magnesium	3710.00			P	
7439-96-5	Manganese	300.00			P	
7439-97-6	Mercury	.06	U		CV	
7440-02-0	Nickel	5.00	B		P	
7440-09-7	Potassium	1900.00			P	
7782-49-2	Selenium	.72	~~B~~	N	F	~~BJ~~ UJ
7440-22-4	Silver	1.33	U		P	
7440-23-5	Sodium	92.50	~~B~~		P	u
7440-28-0	Thallium	.87	U		F	
7440-62-2	Vanadium	30.70			P	
7440-66-6	Zinc	33.70			P	
	Cyanide	1.14	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YG8

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851508

Level (low/med): LOW Date Received: 8/06/93

% Solids: 89.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5470.00			P	
7440-36-0	Antimony	9.97	U		P	
7440-38-2	Arsenic	2.90			F	
7440-39-3	Barium	71.50			P	
7440-41-7	Beryllium	.42	B		P	
7440-43-9	Cadmium	1.06	U		P	
7440-70-2	Calcium	4880.00			P	
7440-47-3	Chromium	6.60			P	
7440-48-4	Cobalt	10.00	B		P	
7440-50-8	Copper	9.70			P	
7439-89-6	Iron	18900.00			P	
7439-92-1	Lead	5.00		S*	F	
7439-95-4	Magnesium	4310.00			P	
7439-96-5	Manganese	319.00			P	
7439-97-6	Mercury	.06	U		CV	
7440-02-0	Nickel	6.00	B		P	
7440-09-7	Potassium	1720.00			P	
7782-49-2	Selenium	.43	~~U~~	WN	F	UJ
7440-22-4	Silver	1.27	U		P	
7440-23-5	Sodium	146.00	B		P	
7440-28-0	Thallium	.86	U		F	
7440-62-2	Vanadium	37.80			P	
7440-66-6	Zinc	46.10			P	
	Cyanide	1.12	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH3

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851509

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5000.00			P	
7440-36-0	Antimony	9.25	U		P	
7440-38-2	Arsenic	2.40			F	
7440-39-3	Barium	79.70			P	
7440-41-7	Beryllium	.41	B		P	
7440-43-9	Cadmium	.98	U		P	
7440-70-2	Calcium	10600.00			P	
7440-47-3	Chromium	6.10			P	
7440-48-4	Cobalt	12.90			P	
7440-50-8	Copper	12.90			P	
7439-89-6	Iron	22800.00			P	
7439-92-1	Lead	3.70		S*	F	
7439-95-4	Magnesium	4520.00			P	
7439-96-5	Manganese	376.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	7.00	B		P	
7440-09-7	Potassium	836.00	B		P	
7782-49-2	Selenium	.40	U	N	F	uJ
7440-22-4	Silver	1.18	U		P	
7440-23-5	Sodium	194.00	B		P	
7440-28-0	Thallium	.80	U		F	
7440-62-2	Vanadium	46.20			P	
7440-66-6	Zinc	38.20			P	
	Cyanide	1.02	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851510

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.5

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	5250.00			P	
7440-36-0	Antimony	9.59	U		P	
7440-38-2	Arsenic	3.90			F	
7440-39-3	Barium	78.00			P	
7440-41-7	Beryllium	.35	B		P	
7440-43-9	Cadmium	1.02	U		P	
7440-70-2	Calcium	8290.00			P	
7440-47-3	Chromium	6.40			P	
7440-48-4	Cobalt	10.60			P	
7440-50-8	Copper	10.70			P	
7439-89-6	Iron	20100.00			P	
7439-92-1	Lead	4.60		S*	F	
7439-95-4	Magnesium	4480.00			P	
7439-96-5	Manganese	347.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	7.40	B		P	
7440-09-7	Potassium	1090.00			P	
7782-49-2	Selenium	.41	~~U~~	N	F	UJ
7440-22-4	Silver	1.22	U		P	
7440-23-5	Sodium	138.00	B		P	
7440-28-0	Thallium	.81	U		F	
7440-62-2	Vanadium	42.60			P	
7440-66-6	Zinc	36.40			P	
	Cyanide	1.04	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

Verified 9/2/94

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH5

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851511

Level (low/med): LOW Date Received: 8/06/93

% Solids: 96.0

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	9.19	U		P	
7440-38-2	Arsenic	5.00			F	
7440-39-3	Barium	69.80			P	
7440-41-7	Beryllium	.41	B		P	
7440-43-9	Cadmium	.98	U		P	
7440-70-2	Calcium	3870.00			P	
7440-47-3	Chromium	5.90			P	
7440-48-4	Cobalt	8.60	B		P	
7440-50-8	Copper	8.30			P	
7439-89-6	Iron	15600.00			P	
7439-92-1	Lead	11.80		S*	F	
7439-95-4	Magnesium	3320.00			P	
7439-96-5	Manganese	303.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	5.50	B		P	
7440-09-7	Potassium	1250.00			P	
7782-49-2	Selenium	.40	~~U~~	N	F	UJ
7440-22-4	Silver	1.30	B		P	
7440-23-5	Sodium	86.10	~~B~~		P	u
7440-28-0	Thallium	.81	U		F	
7440-62-2	Vanadium	30.90			P	
7440-66-6	Zinc	31.20			P	
	Cyanide	1.04	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

verified gj 2/2/94

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YH6

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851512

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4940.00			P
7440-36-0	Antimony	9.55	U		P
7440-38-2	Arsenic	2.10			F
7440-39-3	Barium	74.60			P
7440-41-7	Beryllium	.43	B		P
7440-43-9	Cadmium	1.02	U		P
7440-70-2	Calcium	3580.00			P
7440-47-3	Chromium	6.60			P
7440-48-4	Cobalt	8.40	B		P
7440-50-8	Copper	8.10			P
7439-89-6	Iron	16300.00			P
7439-92-1	Lead	6.00		S*	F
7439-95-4	Magnesium	3570.00			P
7439-96-5	Manganese	302.00			P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	5.80	B		P
7440-09-7	Potassium	1480.00			P
7782-49-2	Selenium	.39	~~U~~	N	F
7440-22-4	Silver	1.22	U		P
7440-23-5	Sodium	118.00	B		P
7440-28-0	Thallium	.79	U		F
7440-62-2	Vanadium	32.10			P
7440-66-6	Zinc	34.90			P
	Cyanide	1.05	U		C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ1

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851513

Level (low/med): LOW Date Received: 8/06/93

% Solids: 80.1

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5450.00			P	
7440-36-0	Antimony	10.80	U		P	
7440-38-2	Arsenic	1.70	B		F	
7440-39-3	Barium	83.40			P	
7440-41-7	Beryllium	.41	B		P	
7440-43-9	Cadmium	1.15	U		P	
7440-70-2	Calcium	4990.00			P	
7440-47-3	Chromium	10.30			P	
7440-48-4	Cobalt	9.70	B		P	
7440-50-8	Copper	24.40			P	
7439-89-6	Iron	18800.00			P	
7439-92-1	Lead	8.80		S*	F	
7439-95-4	Magnesium	4070.00			P	
7439-96-5	Manganese	369.00			P	
7439-97-6	Mercury	.59			CV	
7440-02-0	Nickel	8.10	B		P	
7440-09-7	Potassium	1670.00			P	
7782-49-2	Selenium	.50	~~U~~	N	F	UJ
7440-22-4	Silver	1.70	B		P	
7440-23-5	Sodium	124.00	B		P	
7440-28-0	Thallium	1.00	U		F	
7440-62-2	Vanadium	38.10			P	
7440-66-6	Zinc	63.00			P	
	Cyanide	1.25	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ2

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851514

Level (low/med): LOW Date Received: 8/06/93

% Solids: 89.4

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4770.00			P	
7440-36-0	Antimony	10.20	U		P	
7440-38-2	Arsenic	1.50	B		F	
7440-39-3	Barium	77.60			P	
7440-41-7	Beryllium	.39	B		P	
7440-43-9	Cadmium	1.09	U		P	
7440-70-2	Calcium	3180.00			P	
7440-47-3	Chromium	6.40			P	
7440-48-4	Cobalt	9.20	B		P	
7440-50-8	Copper	8.00			P	
7439-89-6	Iron	16600.00			P	
7439-92-1	Lead	4.30		S*	F	
7439-95-4	Magnesium	3460.00			P	
7439-96-5	Manganese	300.00			P	
7439-97-6	Mercury	.06	U		CV	
7440-02-0	Nickel	7.30	B		P	
7440-09-7	Potassium	1370.00			P	
7782-49-2	Selenium	.44	~~U~~	N	F	US
7440-22-4	Silver	1.60	B		P	
7440-23-5	Sodium	98.70	~~B~~		P	U
7440-28-0	Thallium	.88	U		F	
7440-62-2	Vanadium	35.00			P	
7440-66-6	Zinc	32.90			P	
	Cyanide	1.12	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ3

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851515

Level (low/med): LOW Date Received: 8/06/93

% Solids: 97.7

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

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	3400.00			P	
7440-36-0	Antimony	8.93	U		P	
7440-38-2	Arsenic	1.10	B		F	
7440-39-3	Barium	56.80			P	
7440-41-7	Beryllium	.30	B		P	
7440-43-9	Cadmium	.95	U		P	
7440-70-2	Calcium	2740.00			P	
7440-47-3	Chromium	4.70			P	
7440-48-4	Cobalt	7.30	B		P	
7440-50-8	Copper	9.20			P	
7439-89-6	Iron	13500.00			P	
7439-92-1	Lead	4.60		S*	F	
7439-95-4	Magnesium	2820.00			P	
7439-96-5	Manganese	250.00			P	
7439-97-6	Mercury	.05	U		CV	
7440-02-0	Nickel	6.40	B		P	
7440-09-7	Potassium	1200.00			P	
7782-49-2	Selenium	.41	~~U~~	N	F	US
7440-22-4	Silver	1.14	U		P	
7440-23-5	Sodium	88.20	~~B~~		P	U
7440-28-0	Thallium	.81	U		F	
7440-62-2	Vanadium	25.80			P	
7440-66-6	Zinc	27.40			P	
	Cyanide	1.02	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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verified 5/2/94

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08YJ4

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix (soil/water): SOIL Lab Sample ID: 930851516

Level (low/med): LOW Date Received: 8/06/93

% Solids: 95.8

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	4070.00			P	
7440-36-0	Antimony	9.56	U		P	
7440-38-2	Arsenic	1.30	B		F	
7440-39-3	Barium	64.60			P	
7440-41-7	Beryllium	.37	~~B~~		P	BJ
7440-43-9	Cadmium	1.02	U		P	
7440-70-2	Calcium	4160.00			P	
7440-47-3	Chromium	5.50			P	
7440-48-4	Cobalt	8.30	B		P	
7440-50-8	Copper	13.40			P	
7439-89-6	Iron	14200.00			P	
7439-92-1	Lead	3.80		S*	F	
7439-95-4	Magnesium	3300.00			P	
7439-96-5	Manganese	288.00			P	
7439-97-6	Mercury	.12			CV	
7440-02-0	Nickel	6.40	B		P	
7440-09-7	Potassium	1390.00			P	
7782-49-2	Selenium	.42	~~U~~	WN	F	UJ
7440-22-4	Silver	1.22	U		P	
7440-23-5	Sodium	122.00	B		P	
7440-28-0	Thallium	.83	U	W	F	
7440-62-2	Vanadium	28.90			P	
7440-66-6	Zinc	34.60			P	
	Cyanide	1.04	U		C	

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN 03/90

verified 9/28/94

ATTACHMENT 4

LABORATORY NARRATIVE AND CHAIN-OF-CUSTODY DOCUMENTATION

ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9308L515

W.O. #: 06168-002-001-9999-00
Date Received: 08-06-93

CLP METALS

1. This narrative covers the analyses of sixteen (16) soil samples.

2. The samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory and High Purity.

4. All analyses were performed within the required holding times.

5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.

7. All Preparation/Method Blanks were below Reporting Limits.

8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.

10. All Serial Dilution percent differences were within USEPA SOW control limits.

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more)
except for:

RFW #	Element	%Recovery
001	Selenium	66.7

For analytes where the Matrix Spike is out of control, a Post-digestion Matrix Spike and Serial Dilution are performed (exception allowed for Ag).

Matrix spike analyses are not required for Ca, Mg, Na, and K in waters and soils. Also, not required for Al and Fe in soils.

12. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit except for:

RFW #	Element	%RPD
001	Lead	22.7

13. Method of Standard Additions (MSA) analyses were performed on the following samples:

Element	Sample #'s
Lead	001, 001R, 002-016

14. The code CV is currently in use by the laboratory for both mercury instruments in operation (HG1 and HG2). HG1 is complete with autosampler and software, but still requires manual digestion; HG2 is operated by the analyst, produces a strip chart and also requires manual digestion.

15. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

16. ICP Interelement Correction Factors for IC1 and IC3 are included in this package, but do not appear on EDD.

17. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

8.27.93
Date

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ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD
RFW #: 9308L515

W.O. #: 06168-002-001-9999-00
Date Received: 08-06-93

CLP METALS ADDENDUM

1. Following Exhibit E, Section V, Item 10, page E-23 of the USEPA Statement of Work for Inorganics Analysis, Document Number ILM02.0 ICP Instrument Detection Limits (IDLs) are reported for two (2) ICP instruments. The instrument identification numbers are "IC1" and "IC3". The highest IDL for the two instruments is used for reporting concentration values in this sample data package.

2. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

8.27.93
Date

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Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator Jon Lucas

Company Contact Jon Lucas/Steve Weiss

Telephone 509-376-2789/376-168:

Project Designation/Sampling Locations 200 Area Biota/216-U-11, 216-B-3, 216-A-24, 216-T-4-1

Collection Date 7-30-93 and 8-2-93, 8-5-93

Ice Chest No. RM#110

Field Logbook No. EFL-1094

Bill of Lading/Airbill No. 970 892 506

Offsite Property No. W93-0-0667-13

Method of Shipment ~~Emery~~ Burlington 8-5-93

Shipped to Weston, Lionville, PA

Possible Sample Hazards/Remarks None

Sample Identification

B08YF8	B08YH3
B08YG0	B08YH4
B08YG2	B08YH5
B08YG4	B08YH6
B08YG5	B08YJ1
B08YG6	B08YJ2
B08YG7	B08YJ3
B08YG8	B08YJ4

All samples are soil samples - 2-250 ml aG bottles per sample number

[] Field Transfer of Custody

Chain of Possession (Sign and Print Names)

Relinquished By	Date	Time	Received By	Date	Time
Jonathan D. Lucas					
Hilbeine	8/6/93	4:00 pm	U Brown & Shuff	8/6/93	4:00 pm

Final Sample Disposition

Disposal Method: Disposed by: Date/Time:

Comments:

A-6000-407 (12/92) WEF061

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ATTACHMENT 5

DATA VALIDATION SUPPORTING DOCUMENTATION

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200 Area Bota	REVIEWER: G	DATE: 1/24/94
LABORATORY: Newton	CASE:	SDG: 9308L515-WB-1224
SAMPLES/MATRIX: Soils: B08YF8, B08YG0, B08YG2, B08YG4, B08YG5,* B08YG6, B08YG7, B08YG8, B08YH3, B08YH4*, B08YH5, B08YH6, B08YJ1, B08YJ2, B08YJ3, B08YJ4 (16)		

1. COMPLETENESS AND CONTRACT COMPLIANCE

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	—	—	—

G 1/24/94

Data Package Item	Present?: Yes	No	N/A
Percent Solids Analysis Records	—	—	—
Reduction Formulae	—	—	—
Instrument Run Logs	—	—	—
Chemist Notebook Pages	—	—	—

2. HOLDING TIMES

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

Were all instruments calibrated daily, each set-up time and were 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 <0.995 or the laboratory did not distill the midrange cyanide standard.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries 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.

5. ICP INTERFERENCE CHECK SAMPLE

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

See comment 3

Are target analytes present in the laboratory blanks? Yes No N/A

ACTION: Qualify all associated sample 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

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 valid field blank as nondetected (U).

8. MATRIX SPIKE SAMPLE ANALYSIS

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

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 ANALYSES

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

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

11. DUPLICATE SAMPLE ANALYSIS

See comment 1

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

ij 2/2/94

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 judgment 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.

1516. FURNACE ATOMIC ABSORPTION QUALITY CONTROL

See comment 2

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

Are applicable duplicate injection RSD values within control? 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 correllation coefficient was <0.995, qualify the associated detected results as estimated (J).

17. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly?	Yes	No	N/A
Are results within the calibrated 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

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were ~~project~~ ~~specific~~ normal data quality objectives met for this analysis? GJ 2/2/94	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):

1. The Pb is flagged with a * which is incorrect. The duplicate analysis is within criteria. No qualification of data is necessary.

2. GFAA:

a) all Pb were run MSA; Pb r<.995 for samples B08YG0, B08YG5, results qualified as J+. For MSA results the absorbance was not printed, but no qual)

Pb MSA results were a 2X dilution as written on raw data sheet. No qual. of data.

Se spikes out for Samples B08YG2, B08YJ4. Data qualified as estimated (NJ).

3 Selenium was detected in the Prep. blank at .4 mg/kg which is at the CRDL. Results flagged as U for B08YF8 + B08YG7 (< 5X CRDL). All other results for Se were nondetects. Lab did not redigest + reanalyze.

039

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG:	REVIEWER: C Johnson	DATE: 2/2/94	PAGE 1 OF 1
COMMENTS:	metals 9308L515-WES-1224		

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
ICB	Be	-1.2	B		ug/L	2x=2.4		B084K4	BJ 2/3/94
ICB	Se	-2.9	B		ug/L	2x=5.8		All	~~J~~/UJ
ICB	Na	96.9	B		ug/L	484.5		B084G2	u
↓	↓	↓	↓		↓	↓		B084G7	u
								B084H5	u
								B084J2	u
								B084J3	u
PBLK	Se (>CRDL)	.4			ug/kg	2		B084F8	UJ
↓	↓	↓			↓	↓		B084G7	UJ

HOLDING TIME SUMMARY - FORM B-1

Package 9308L575-WES-1224

SDG:	REVIEWER: C. Jensen	DATE: 1/24/94	PAGE 1 OF 1
COMMENTS: Metals			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B08Y58, B08Y60	Metals	7/30/93	8/17/93	8/21, 8/24	18	4	none
B08Y62, B08Y64	Cn	↓	8/12/93	8/12/93	13	0	none
B08Y57, B08Y61	Hg	↓	8/20/93	8/23/93	20	3	none
B08Y63	Pb, As	↓	8/17/93	8/24/93, 8/25	18	7, 8	none
↓	Se, Tl	↓	8/17/93	8/24/93, 8/23/93	18	7, 6	none
B08Y65, B08Y66	Metals	8/2/93	8/17/93	8/21/93	15	4	none
B08Y67, B08Y68	Cn	↓	~~8/20/93~~ 8/12/93	~~8/23/93~~ 8/12/93	10	0	none
B08Y43, B08Y44	Hg	↓	8/20/93 8/24/93	8/23/93 8/26/93	3/2/94 ~~20~~ 18	3/2/94 ~~3~~ 3	none
B08Y45, B08Y46	Pb, As	↓	8/17/93	8/23/93	15	6	none
↓	Se, Tl	↓	8/17/93	8/25, 8/23/93	15	8, 6	none
B08Y51, B08Y52	Metals	8/4/93	8/17/93	8/21/93	13	4	none
B08Y53, B08Y54	Cn	↓	8/12/93	8/12/93	8 12/2/94	0	none
B08Y55, B08Y56	Hg	↓	8/20/93	8/23/93	16	3	none
B08Y57, B08Y58	Pb, As	↓	8/17/93	8/24/93	13	7	none
↓	Se, Tl	↓	8/17/93	8/24 + 8/23/93	13	7, 8	none
							✗

U.S. EPA - CLP

3
BLANKS

Lab name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	27.0	U	27.0	U	27.0	U					P
Antimony	47.0	U	47.0	U	47.0	U					P
Arsenic											NR
Barium	5.3	B	4.0	U	4.0	U					P
Beryllium	-1.2	B	1.0	U	1.0	U					P
Cadmium	5.0	U	5.0	U	5.0	U					P
Calcium	20.0	U	20.0	U	20.0	U			8.4 mg/kg		P
Chromium	5.0	U	5.0	U	5.0	U					P
Cobalt	8.0	U	8.0	U	8.0	U					P
Copper	6.0	U	6.0	U	6.0	U					P
Iron	16.4	B	13.0	U	13.0	U					P
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium	107.0	U	107.0	U	107.0	U					P
Manganese	3.4	B	3.4	B	2.0	U					P
Mercury											NR
Nickel	14.0	U	14.0	U	14.0	U					P
Potassium	-1100.0	B	-860.0	B	648.0	U					P
Selenium											NR
Silver	6.0	U	6.0	U	6.0	U					P
Sodium	55.0	U	74.9	B	77.4	B			22.2 mg/kg		P
Thallium											NR
Vanadium	12.1	B	3.4 mg/kg 19.9	B	19.9	B			3 mg/kg		P
Zinc	9.0	U	9.0	U	9.0	U					P
Cyanide											NR

X

FORM III - IN 03/90

S08454

qualified Be for S08454 as BJ
no qual for V; Fe, Mn, K, Na
this page.

5/2/1994

042

~~0096~~

U.S. EPA - CLP

3
BLANKS

Lab name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (1)	C	2 (2)	C	3 (3)	C	Prepa-ration Blank 5X	C	M
Aluminum	27.0	U	27.0	U	27.0	U	27.0	U	5.400	U	P
Antimony	47.0	U	47.0	U	47.0	U	47.0	U	9.400	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	.400	U	F
Barium	4.0	U	4.0	U	4.0	U	4.0	U	.800	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	.200	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Calcium	20.0	U	20.5	B	20.0	U	20.0	U	~~42 mg/L~~ 8.400	B	P
Chromium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Cobalt	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Copper	6.0	U	6.0	U	6.0	U	6.0	U	1.200	U	P
Iron	13.0	U	13.0	U	20.6	B	22.0	B	2.600	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	.400	U	F
Magnesium	107.0	U	107.0	U	107.0	U	107.0	U	21.400	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	.400	U	P
Mercury	.1	U	.1	U	.1	U	.1	U	.050	U	CV
Nickel	5 1/2/94 14.0	U	14.0	U	14.0	U	14.0	U	2.800	U	P
Potassium	~~140~~ 648.0	U	648.0	U	648.0	U	648.0	U	129.600	U	P
Selenium	~~2.5~~ -2.9	B	2.0	U	2.0	U	2.0	U	.400		F
Silver	6.0	U	6.0	U	6.0	U	6.0	U	1.200	U	P
Sodium	96.9	B	81.7	B	93.4	B	55.0	U	22.200	B	P
Thallium	4.0	U	4.0	U	4.0	U	4.0	U	.800	U	F
Vanadium	14.4	B	12.5	B	11.8	B	9.0	U	3.000	B	P
Zinc	9.0	U	9.0	U	9.0	U	9.0	U	1.800	U	P
Cyanide	10.0	U	10.0	U	10.0	U			1.000	U	C

FORM III - IN 03/90

B084F8
B084G0
B084G2

B084G4
B084G5
B084G6
B084G7
B084G8
B084H3
B084H4
B084H5
B084H6

B084J1
B084J2
B084J3

~~Se -2.9 ug/L / 5 = .58 mg/kg~~
~~x 2 = 1.16 mg/kg~~
~~to qualify~~

5/2/94

5/2/94

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B08YF8S

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 96.2

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	85.7000		9.7713	U	103.90	82.5		P
Arsenic	75-125	8.9000		1.6000	B	8.30	87.9		F
Barium	75-125	446.0000		72.9000		415.80	89.7		P
Beryllium	75-125	9.4000		.3700	B	10.40	86.8		P
Cadmium	75-125	8.8000		1.0395	U	10.40	84.6		P
Calcium									NR
Chromium	75-125	42.7000		5.5000		41.60	89.4		P
Cobalt	75-125	102.6000		8.8000	B	103.90	90.3		P
Copper	75-125	55.6000		9.2000		52.00	89.2		P
Iron									NR
Lead	75-125	7.3000		3.5000		4.20	90.5		F
Magnesium									NR
Manganese	75-125	397.7000		285.0000		103.90	108.4		P
Mercury	75-125	.5170		.0520	U	.52	99.4		CV
Nickel	75-125	100.1000		7.0000	B	103.90	89.6		P
Potassium									NR
Selenium	75-125	2.0000		.6000	B	2.10	66.7	N	F
Silver	75-125	10.6000		1.2474	U	10.40	101.6		P
Sodium									NR
Thallium	75-125	11.3000		.8316	U	10.40	108.4		F
Vanadium	75-125	131.5000		31.2000		103.90	96.5		P
Zinc	75-125	123.0000		29.1000		103.90	90.4		P
Cyanide	75-125	4.9110		1.0400	U	5.20	94.4		C

Comments:

FORM V (Part 1) - IN 03/90

All sample results for Se qualified as estimated (J, UJ) 2/3/94 2/2/94

U.S. EPA - CLP

8
Standard Addition Results

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP515

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
B08YF8	PB	.026	10.00	.032	20.00	.052	30.00	.071	28.4	.9784	+
B08YF8	PB	.017	10.00	.039	20.00	.056	30.00	.071	21.1	.9961	
B08YG0	PB	.018	10.00	.035	20.00	.055	30.00	.044	47.6	.8088	+
B08YG2	PB	.015	10.00	.036	20.00	.049	30.00	.068	18.8	.9964	
B08YG4	PB	.017	10.00	.026	20.00	.052	30.00	.076	12.1	.9824	+
B08YG5	PB	.020	10.00	.040	20.00	.046	30.00	.064	31.6	.9822	+
B08YG6	PB	.020	10.00	.037	20.00	.053	30.00	.068	25.6	.9996	
B08YG7	PB	.025	10.00	.039	20.00	.054	30.00	.074	29.3	.9963	
B08YG8	PB	.021	10.00	.033	20.00	.052	30.00	.070	23.0	.9956	
B08YH3	PB	.016	10.00	.032	20.00	.050	30.00	.067	18.2	.9998	
B08YH4	PB	.020	10.00	.035	20.00	.050	30.00	.071	22.4	.9962	
B08YH5	PB	.041	10.00	.051	20.00	.067	30.00	.081	58.2	.9961	
B08YH6	PB	.025	10.00	.040	20.00	.057	30.00	.073	30.6	.9997	
B08YJ1	PB	.029	10.00	.043	20.00	.058	30.00	.077	35.1	.9974	
B08YJ3	PB	.018	10.00	.033	20.00	.051	30.00	.065	22.5	.9989	
B08YJ4	PB	.016	10.00	.031	20.00	.050	30.00	.066	18.2	.9991	
B08YF8	PB	.015	10.00	.034	20.00	.050	30.00	.070	16.7	.9992	
B08YG0	PB	.018	10.00	.038	20.00	.050	30.00	.073	20.6	.9936	+
B08YG5	PB	.026	10.00	.035	20.00	.058	30.00	.075	27.1	.9878	+
B08YG4	PB	.046	10.00	.093	20.00	.145	30.00	.179	21.1	.9992	
B08YJ2	PB	.017	10.00	.031	20.00	.050	30.00	.066	19.4	.9985	

FORM VIII - IN 03/90

r < .995 for
samples B08YG0 and B08YG5
results qualified J. 5/2/94