9613408.1906 9302L495-WES-1025

START

WESTON

0043454

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

Client: WESTINGHOUSE HANFORD
RFW #: 9302L495

W.O. #: 06168-002-001-9999-00
Date Received: 02-03-93

GC/MS VOLATILE

The set of samples consisted of fourteen (14) water samples collected on 01-30,31-93 and 02-01-93.

The samples were analyzed according to criteria set forth in CLP SOW 03/90 for TCL Volatile target compounds on 02-09,10-93.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. Non-target compounds were not detected in these samples.
2. All system monitoring compound (surrogate) recoveries were within EPA QC limits.
3. All matrix spike recoveries were within EPA QC limits.
4. All blank spike recoveries were within EPA QC limits.
5. The laboratory blanks contained the common contaminant Methylene Chloride at levels less than the CRQL.
6. All internal standard area and retention time criteria were met.

FEB 1996
RECEIVED
EDMC

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

03-09-93
Date

sma/voa/02-495v.cn

WESTON Analytics Use Only

9302L495

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse-Hanford
Est. Final Proj. Sampling Date:
Work Order #: 0100B-000-001-0009-00
Project Contact/Phone #:
AD Project Manager: JOSIE EDWARDS
QC: CLP Del: CLP TAT: 35 DAY
Date Rec'd: 2/3/93 Date Due: 3/10/93
Account #: WSHANFORD

Refrigerator #		1					3	3	3	3	3		3						
#/Type Container	Liquid	3G					1G	1P	1P	1P	1P		1P						
	Solid																		
Volume	Liquid	40ml					500	250	1L	1L	1L		1L						
	Solid																		
Preservatives		HCL					—	HNO3	—	HNO3/NaOH			HNO3						
ANALYSES REQUESTED →		ORGANIC								INORG									
		VOA	BNA	Pest/PCB	Herb		Anions	Nor NO3	Alk TDS	Metal	CN		RH metals						
		WESTON Analytics Use Only																	
		Clossary					ICP01 ICS01 ICP1 ICP1	IC0376	IAIK1 TDS	MS0SW MBLTO	IC0070		MS0SW + MBTSO						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Clossary				ICP01 ICS01 ICP1 ICP1	IC0376	IAIK1 TDS	MS0SW MBLTO	IC0070		MS0SW + MBTSO				
S - Soil	001	B0B2F4			W	2/1/93						✓	✓	✓	✓	✓						
SE - Sediment	002	B0B2F6																✓				
SO - Solid	003	B0B2F7						✓														
SL - Sludge	004	B0B2C8										✓	✓	✓	✓	✓						
W - Water	005	B0B2D0																✓				
O - Oil	006	B0B2D1						✓														
A - Air	007	B0B2W4										✓	✓	✓	✓	✓						
DS - Drum Solids	008	B0B2W6																✓				
DL - Drum Liquids	009	B0B2W7						✓														
L - EP/TCLP Leachate	010	B0B2L6				1/31/93						✓	✓	✓	✓	✓						
WI - Wipe																						
X - Other																						
F - Fish																						

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
Temp = 6.8°, 6.7°, 6.1°, 6.4°
Radiochem = Total Alpha/Beta, Gamma Spec, Sr-90, Pu 238/239/240, Tot. Uranium.

DATE/REVISIONS: RAD INFO TO FOLLOW
2-9-93 1. Radio Chem subbed to Teledyne
2.
3.
4.
5.
6.

ORIGINAL RELINQUISHED

Relinquished by	Received by	Date	Time
EMERY	S Perkins	2/3/93	120
	SP 2/3/93		

Relinquished by	Received by	Date	Time
	SP 2/3/93		

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

WESTON Analytics Use Only

Samples were:
1) Shipped X or Hand Delivered
Airbill # EMERY
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) 2-9-93
ICP04 out of Hold

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'd (Y) or N

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

96134081907

WESTON Analytics Use Only

G13024495

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse-Hanford
Est. Final Proj. Sampling Date:
Work Order #: CLE108-002-001-9999-00
Project Contact/Phone #:
AD Project Manager: Joe Edwards
QC: CLP Del: CLP TAT: 35 DAYS
Date Rec'd: 2/3/93 Date Due: 3/10/93
Account #: WS-HANFORD

Refrigerator #																	
#/Type Container	Liquid	3G7				1G	1P	1P	1P	1P		1P					
	Solid																
Volume	Liquid	40ml				500	250	1L	1L	1L		1L					
	Solid																
Preservatives		HCL				—	HCOH	—	HNO3	NaOH		HNO3					
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb	Anions	300/300	Alk TDS	Metal	CN		Diss Metals					
		WESTON Analytics Use Only															
		CLP3/4				HCFOU HCFOU HCFL HCFL	3L3L2	3AHL 1TDS	MHSLOW + MBETO	IC1C		MHSLOW + MBETO					

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected															
S - Soil						1/31/93																
SE - Sediment	011	B082L8			W	2/1/93												✓				
SO - Solid	012	B082L9						✓														
SL - Sludge	013	B082D2				2/1/93						✓	✓	✓	✓	✓						
W - Water	014	B082D4																✓				
O - Oil	015	B082D5						✓														
A - Air	016	B082C0										✓	✓	✓	✓	✓						
DS - Drum Solids	017	B082C2																✓				
DL - Drum Liquids	018	B082C3						✓														
L - EP/TCLP Leachate	019	B082B8				1/30/93						✓	✓	✓	✓	✓						
WI - Wipe	020	B082B0																✓				
X - Other																						
F - Fish																						

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
Temp=6.8°C, 6.7°C, 6.1°C, 6.4°C

DATE/REVISIONS: BAD INFO TO FOLLOW
1.
2.
3.
4.
5.
6.

ORIGINAL RE-WRITTEN

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
EMERY	S Perro	2/3/93	120		SP 2/3/93		
	SP 2/3/93						

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # See
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

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

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

9613408.1908 000063

WESTON Analytics Use Only

93C2L495

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse-Hanford
Est. Final Proj. Sampling Date:
Work Order #: CLP-CCB-001-9999-00
Project Contact/Phone #:
AD Project Manager: Josie Edwards
QC: CLP Del: CLP TAT: 35 DAYS
Date Rec'd: 2/3/93 Date Due: 3/10/93
Account #: WS-HANFORD

Refrigerator #																
#/Type Container	Liquid	3G				1G	1P	1P	1P	1P		1P				
	Solid															
Volume	Liquid	40ml				500	250	1L	1L	1L		1L				
	Solid															
Preservatives		HCL				—	H2SO4	—	HNO3	NaOH		HNO3				
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	Anions	NO2 NO3	Alk TDS	Metal	CN		Diss Metals				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only: CLP344				BCP4 BSC4 TOC TCFL	IONBUF	IONKL LTDS	MHSLTDLC MGLTD	IONUTC		MHSLTDLC MGLTD				
S - Soil	021	B0B2B1			W	1/30/93		✓														
SE - Sediment	022	B0B2M0				1/31/93						✓	✓	✓	✓	✓						
SO - Solid	023	B0B2M2																✓				
SL - Sludge	024	B0B2M3						✓														
W - Water	025	B0B2Y4										✓	✓	✓	✓	✓						
O - Oil	026	B0B2Y6																✓				
A - Air	027	B0B2Y7						✓														
DS - Drum Solids	028	B0B2B2				1/30/93						✓	✓	✓	✓	✓						
DL - Drum Liquids	029	B0B2B4																✓				
L - EP/TCLP Leachate	030	B0B2B5						✓														
WI - Wipe																						
X - Other																						
F - Fish																						

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
TEMP= 6.8°C, 6.7°C, 6.1°C, 6.4°C

DATE/REVISIONS: RAD INFO TO FOLLOW
1.
2.
3.
4.
5.
6.

ORIGINAL RE-WRITTEN

Relinquished by	Received by	Date	Time
EMERY	SPerka	2/3/93	120
	SP 2/3/93		

Relinquished by	Received by	Date	Time
	SP 2/3/93		

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

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

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

9613408.1909

WESTON Analytics Use Only

93CQL495

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse-Hanford
Est. Final Proj. Sampling Date:
Work Order #: CQL08-009-001-9999-00
Project Contact/Phone #:
AD Project Manager: Josie Edwards
QC: CLP Del: CLP TAT: 35 days
Date Rec'd: 2/3/93 Date Due: 3/16/93
Account #: WS-HANFORD

Refrigerator #																
#/Type Container	Liquid	36				16	1P	1P	1P	1P		1P				
	Solid															
Volume	Liquid	40ml				500	250	1L	1L	1L		1L				
	Solid															
Preservatives		HCL				—	HNO3	—	HNO3	NaOH		HNO3				
ANALYSES REQUESTED →		ORGANIC				Anions	Cyanide	Phenols	INORG			RCRA Metals				
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
WESTON Analytics Use Only		CLP/LH				IC 300.0 IC 350.0 IC 352.1 IC 353.2	IC 335.2	IC 420.1 IC 376.2	ICP-MS/CLP + ICP/CLP	ICP/CLP		ICP-MS/SW + ICP/SW				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Anions	Cyanide	Phenols	Metal	CN		RCRA Metals
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	031	B08290			W	1/30/93						✓	✓	✓	✓	✓		
	032	B08292																✓
	033	B08293						✓										
	034	B08294										✓	✓	✓	✓	✓		
	035	B08296																✓
	036	B08297						✓										
	037	B08296										✓	✓	✓	✓	✓		
	038	B08298																✓
	039	B08299						✓										
	040	B08292										✓	✓	✓	✓	✓		

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
TEMP = 6.8°C, 6.7°C, 6.1°C, 6.4°C

DATE/REVISIONS: BAD INFO TO FOLLOW
1.
2.
3.
4.
5.
6.

ORIGINAL - RE-WRITTEN

Relinquished by	Received by	Date	Time
EMERY	SPerkin	2/3/93	120
	SP 2/3/93		

Relinquished by	Received by	Date	Time
	SP 2/3/93		

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

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

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

9613408.1910

WESTON Analytics Use Only
93024495

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse Hanford
Est. Final Proj. Sampling Date:
Work Order #: 01W08-002-001-9999-00
Project Contact/Phone #:
AD Project Manager: Kere Edwards
QC: CLP Del: CLP TAT: 35 DAYS
Date Rec'd: 2/3/93 Date Due: 3/10/93
Account #: WS-HANFORD

Refrigerator #																			
#/Type Container	Liquid	29				19	1P	1P	1P	1P		1P	2P/1G						
	Solid																		
Volume	Liquid	40ml				500	250	1L	1L	1L		1L	1L/500						
	Solid																		
Preservatives		HCL				—	H2SO4	—	HNO3	NaOH			HNO3/NaOH						
ANALYSES REQUESTED →		ORGANIC							INORG										
		VOA	BNA	Pest/PCB	Herb	Alkalinity	TOC	AIR TDS	Metal	CN		Rad Metals	Radionuclides						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	WESTON Analytics Use Only: VOA	BNA	Pest/PCB	Herb	Alkalinity	TOC	AIR TDS	Metals	CN		Rad Metals	Radionuclides
S - Soil	041	B0B2J4			W	1/30/93												✓	
SE - Sediment	042	B0B2J5				1/30/93		✓											
SO - Solid	043	B0B2W9				1/31/93													✓
SL - Sludge																			
W - Water		Radiochem - TC-99, Tritium, Total Alpha/Beta, Gamma spec, Sr-90, Pu 238/239/240,																	
O - Oil		Total Uranium.																	
A - Air																			
DS - Drum Solids																			
DL - Drum Liquids																			
L - EP/TCLP Leachate																			
WI - Wipe																			
X - Other																			
F - Fish																			

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
TEMP = 6.8°C; 6.7°C; 6.1°C; 6.4°C

DATE/REVISIONS: BAD INFO TO FOLLOW
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

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

ORIGINAL RE-WRITTEN

Relinquished by	Received by	Date	Time
EMERY	SPerkins	2/3/93	1200
	SP 2/3/93		

Relinquished by	Received by	Date	Time
	SP 2/3/93		

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

9613408.1911 000006

9613408.1912 0000007

C.8^00

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 2/1/93

Ice Chest No. SML-243

Field Logbook No. WHC-N-4461

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0226-16

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

001 B082F4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

002 B082F6
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

3 B082F7
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 2-1-93 C. Celebrini C. CELEBRINI 1305	Received by: FAM COLE Fam Cole	Date/Time: 2-2-93 0950
Relinquished by: FAM COLE 2-2-93 Fam Cole 0950	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perko	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON ICE COOLER 223

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1913

0000008

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 2/1/93 Time _____ hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082F4	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	•	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	•	NO2/NO3 (H2SO4)
	1, 1L, P	•	ALKALINITY, TDS
	1, 1L, P	•	CLP-CYANIDE (NaOH)
B082F6	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082F7	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-D11
			OPC#: W93-D-0226-16
			BOL#: 253695276-T

Field Information** Cold, 40° slight wind, cloudy

Special Handling and/or Storage NA

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(05

9613408.1914

6.7°C

0000009

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 2/1/93

Ice Chest No. SML-160

Field Logbook No. WHL-N-4461

Bill of Lading/Airbill No. 253695276T

Offsite Property No. W93-0-0226-16

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

4 B082C8
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

5 B082D0
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

6 B082D1
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C. Celebrate C. CELTBRATI 2/1/93 1365	Received by: Pam Cole 2-2-93	Date/Time: 2-2-93 0952
Relinquished by: Pam Cole 2-2-93 0952	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Reska	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: On ice Cooler 22°

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1915 0000010

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 2-1-93 Time 1611 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082C8	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	•	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	•	NO2/NO3 (H2SO4)
	1, 1L, P	•	ALKALINITY, TDS
	1, 1L, P	•	CLP-CYANIDE (NaOH)
B082D0	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082D1	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-16
			BOL#: 253695276-T

Field Information** Cloudy, 40°, slight wind

Special Handling and/or Storage NA

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(0)

9613408.1916

6.7°C

0000011

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 2-1-93

Ice Chest No. SML-160

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253685276-T

Offsite Property No. W93-0-0226-16

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

7 BO 82W4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

8 BO 82W6
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

9 BO 82W7
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 2-1-93 1305 B. WESTON	Received by: PAM COLE	Date/Time: 2-2-93 0953
Relinquished by: PAM COLE 2-2-93 0953	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Rosa	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON ICE COOLER SML-205

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1917 000012

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 8-1-93 Time 1153 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082W4	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B082W6	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082W7	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-D-0226-16
			BOL#: 253695276-T

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(0E

9613408.1918 0000013

6-7 oc

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/31/93

Ice Chest No. SML-160

Field Logbook No. 561 ~~1-28~~ 1021 cc 1-31-93

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-022616

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

10 B08226
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

11 B08228
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

12 B08229
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C Celebrit 1-31-93 cc 35 C CELEBRIT,	Received by: PAM COLE Pam Cole	Date/Time: 2-2-93 0955
Relinquished by: PAM COLE 2-2-93 0955 Pam Cole	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perka	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON ice Cooler SML-47

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1919 0000014

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/31/93 Time 0453 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082L6	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B082L8	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082L9	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-16
			BOL#: 253695276-T

Field Information** Cold 30°, Slight wind

Special Handling and/or Storage NA

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(05

9613408.1920 0000018

6.8 oo

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 2-1-93

Ice Chest No. SML-243

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0226-16

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

13 B08202
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

14 B08204
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

15 B08205
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 2-1-93 1305 [signature]	Received by: PAM COLE [signature]	Date/Time: 2-2-93 0945
Relinquished by: PAM COLE 2-2-93 0945 [signature]	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Rosta	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON IPE SML-196

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1921 0000019

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 2-1-93 Time 1102 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082D2	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B082D4	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082D5	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: ~~253695276T~~ I.C. 2243 WP3-002
			BOL#: 253695276T

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(0

9613408.1922 0000023

6.8 oc

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 2-1-93

Ice Chest No. # SML-243

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0226-16

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

16 B082C0
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

17 B082C2
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

18 B082C3
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 2-4-93 1305 G. WHITTEN	Received by: PAM COLE 2/2/93 Pam Cole	Date/Time: 2/2/93 0941
Relinquished by: Pam Cole 2-2-93 0941	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perka	Date/Time: 2/3/93 1200
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: FRIG # ON ICE COOLER SML-196

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1923 0000022

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 2-1-93 Time 0957 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082C0	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B082C2	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082C3	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: ~~WOG~~ PC 2290 W93-0-0226-16
			BOL#: 2536952276-T

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(C

9613408.1924 0000025

6.1 oc

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/30/93

Ice Chest No. SML-204

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0266-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

19 B08298
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

20 B08280
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

21 B08281
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: C. Gilbert C. GILBERT 1.30.93 1317	Received by: K. Trapp / K. Trapp	Date/Time: 2/1/93 1500
Relinquished by: K. Trapp / K. Trapp 2/2/93 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perko	Date/Time: 2/3/93 1200
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON ICE IN COOLER DRAKE

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1925 0000028

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/30/93 Time 1017 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09298	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B09280	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B09281	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0266-14
			BOL#: 253695276-T

Field Information** Cloudy, slight wind 34° cold

Special Handling and/or Storage NA

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(C

9613408.1926 6.1 oc 0000028

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/31/93

Ice Chest No. SML-204

Field Logbook No. WHC-N-4461

Bill of Lading/Airbill No. 2536952756-T KT 2/1/93

Offsite Property No. W93-0-0266-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

22 B082M0
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

23 B082M2
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

24 B082M3
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 1/31/93 0650 G.C. Hamilton	Received by: K. Trapp / K. Trapp	Date/Time: 2/1/93 1500
Relinquished by: 2/2/93 K. Trapp / K. Trapp 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perla	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
ON ICE COOLER # SML-244

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1927 0000029

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/3/93 0520 Time 0520 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B092M0	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B092M2	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B092M3	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0266-14
			BOL#: 253694276-T

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(

9613408.1928 0000031

6.1

Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/31/93

Ice Chest No. SML-204

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0266-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

25 B082Y4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

26 B082Y6
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

27 B082Y7
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 1/31/93 C. Gilbert C. Gilbert 0635	Received by: K. Trapp / K. Trapp	Date/Time: 2/1/93 1500
Relinquished by: 2/2/93 K. Trapp / K. Trapp 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Resto	Date/Time: 2/3/93 130
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: on ice cooler # SML-160

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1929 0000032

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/31/93 Time 0450 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09244	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B09246	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B09247	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0266-14
			BOL#: 253695276-T

Field Information** Cold 30°, Slight wind

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

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

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

A-6000-406(

9613408.1930 0000034

6.4°C

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/30/93

Ice Chest No. SML-301

Field Logbook No. EG-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0226-15

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

28 B082B2
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

29 B082B4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

30 B082B5
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
C Calibert C CALIBERT 1321 1/30/93	K. Trapp / K. Trapp	2/1/93 1500
Relinquished by: K. Trapp / K. Trapp 2/2/93 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perro	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: ON ICE IN COOLER SML-201

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1931 0000035

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/30/93 Time 0833 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082B2	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
	2/1/93		
B082B4	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082B5	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-15
			BOL#: 253695276-T

Field Information** Cold cloudy, 32° Slight wind

Special Handling and/or Storage N/A

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(01

9613408.1932
6.1 oc

0000038

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/30/93

Ice Chest No. SML-262

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-026-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

34 B082C4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

35 B082C6
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

34 B082C7
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody	Chain of Possession	(Sign and Print Names)
Relinquished by: 1.30.93 C. Celebrezzi C. CELEBREZZI 1815	Received by: K. Trapp / K. Trapp	Date/Time: 2/1/93 1500
Relinquished by: 2/2/93 K. Trapp / K. Trapp 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Perko	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:
ON ICE COOLER HAMMER

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1933 0000037

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/30/93 Time 1207 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B09264	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B09266	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B09267	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-14
			BOL#: 253695276-T

Field Information** Cold 30°, cloudy, lite wind

Special Handling and/or Storage NA

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

A-6000-406(0

9613408.1934 6.1 ac 0000039

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/30/93

Ice Chest No. SML-262

Field Logbook No. EFL-1020

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0266-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

37 B082B6
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

38 B082B8
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

39 B082B9
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
1-30-93 C. Cellwell C. Cellwell 1315	K. J. Mapp / K. Trapp	2/1/93 1500
Relinquished by: 2/2/93 K. J. Mapp / K. Trapp 0930	Received by:	Date/Time:
Relinquished by: Emery	Received by: Susan Russo	Date/Time: 2/3/93 1200
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: Refrid #4

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1935 0000040

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/3/93 Time 1:05 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B0B2B6	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B0B2B5	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B0B2B9	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-14
			BOL#: 253C95276-T

Field Information** Cold 30°, Cloudy, Slight wind

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

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

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

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Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Telephone (509)376-5045

Project Designation/Sampling Locations 200-BP-1

Collection Date 1/30/93

Ice Chest No. SML-262

Field Logbook No. WHCN-4461

Bill of Lading/Airbill No. 253695276-T

Offsite Property No. W93-0-0226-14

Method of Shipment EMERY

Shipped to WESTON

Possible Sample Hazards/Remarks N/A

Sample Identification

40 B082J2
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (UNFILTERED)
- 1, 500ml, G, WATER, ANIONS(PO4,SO4,Cl,F)
- 1, 250ml, P, WATER, NO2/NO3 (H2SO4)
- 1, 1L, P, WATER, ALKALINITY/TDS
- 1, 1L, P, WATER, CLP-CYANIDE(NaOH)

41 B082J4
- 1, 1L, P, WATER, TAL METALS+Bi(HNO3) (FILTERED)

42 B082J5
- 3, 40ml, Gs, WATER, CLP-VOA

[] Field Transfer of Custody — Chain of Possession — (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
1/30/93 1338 GG Hamilton	K. Trapp / K. Trapp	2/1/93 1500
Relinquished by: 2/2/93 K. Trapp / K. Trapp 0930	Received by:	Date/Time:
Relinquished by: EMERY	Received by: Susan Rusko	Date/Time: 2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1937 000042

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 11/30/93 1200 Time 1200 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B082J2	1, 1L, P	WATER	TAL METALS + Bi (HNO3) UNFILTERED
	1, 500ml, G	"	ANIONS (PO4,SO4,Cl,F)
	1, 250ml, P	"	NO2/NO3 (H2SO4)
	1, 1L, P	"	ALKALINITY, TDS
	1, 1L, P	"	CLP-CYANIDE (NaOH)
B082J4	1, 1L P	WATER	TAL METALS + Bi (HNO3) FILTERED
B082J5	3, 40ml, Gs	WATER	CLP-VOA
			TASK #: 93-011
			OPC#: W93-0-0226-14
			BOL#: 253695276-T

Field Information** _____

Special Handling and/or Storage _____

Possible Sample Hazards _____

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

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

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

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Westinghouse Hanford Company

CHAIN OF CUSTODY

Custody Form Initiator PH BUTCHER

Company Contact PH BUTCHER

Project Designation/Sampling Locations 200-BP-1

Ice Chest No. SMC-301

Bill of Lading/Airbill No. 253697276-T

Method of Shipment EMERY

Shipped to WESTON/ECOTECK

Possible Sample Hazards/Remarks N/A

Telephone (509)376-5045

Collection Date 1/31/93

Field Logbook No. EFL-1020

Offsite Property No. ~~W92~~ W93-0-026 KI 2/2/93

Sample Identification

43 BO 82W9

1, 1L, P, WATER, Tc-99 (HCl)
1, 500ml, Gs, WATER, TRITIUM
1, 4L, P, WATER, TOTAL ALPHA/BETA, GAMMA SPEC, Sr-90, Pu-238/239/240, TOTAL URANIUM (HNO3)

[] Field Transfer of Custody

Relinquished by:	Received by:	Date/Time:
C. Celebrek C. CELEBREK 1/31/93 635	K. Mapp / K. Trapp	2/2/93 0930
Relinquished by:	Received by:	Date/Time:
K. Mapp / K. Trapp 2/2/93 0945		
Relinquished by:	Received by:	Date/Time:
EMERY	Susan Rerko	2/3/93 120
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments: On ice cooler # SMC-160

A-6000-407 (12/90) (EF) WEF061
Chain of Custody

9613408.1939 0000046

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector KD LEE/GG HAMILTON Date Sampled 1/31/93 Time 0450 hours

Company Contact PH BUTCHER Telephone (509) 376-5045

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
30 9249	1, 1L, P	WATER	Tc-99 (HCl)
	1, 500ml, Gs	"	TRITIUM
	1, 4L, P,	"	TOTAL ALPHA/BETA, GAMMA SPEC., Sr-90, Pu-238/239/
			240, TOTAL URANIUM (HNO3)
			TASK #: 93-011
			OPC#: W93-0-0266-15
			BOL#: 253695276-T

Field Information** Cold 30°, slight wind

Special Handling and/or Storage

Possible Sample Hazards

PART II: LABORATORY SECTION

Received by Title Date

Analysis Required

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

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

A-6000-406(

9613408.1940 0000048

OVERNIGHT AIR
~~SATURDAY DELIVERY~~

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WESTINGHOUSE HANFORD		[illegible]

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
PROCESSING & ANALYTICAL LABS	ANALYTICAL CHEMISTRY	SAMPLING & MOBILE LABS

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

Routing EMERY AIR EXPRESS ☒ Contractor ☐ Vendor

Shipped to
WESTON LAB
208 WELSH POOL ROAD
LIONVILLE, PA. 19341

Off-site Custodian
JOSIE KING

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1	POLYCOOLER. SAMPLES ARE BUBBLE WRAPPED, DOUBLE BAGGED AND STORED ON WET ICE.	
WEIGHT 57 lbs	COOLER # Austin	
	SAMPLE #s ~~93001-01.A28~~, 93022-01.A28 thru -04.A28 RRS 2-2-92	

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

Necessity for the Off-Site Use of this Property

SAMPLES REQUIRE ANALYSIS THAT ARE NOT PRESENTLY AVAILABLE AT THIS SITE.

SAF # 93-001 & 93-022
C of C # 3486

BILL OF LADING # [illegible]

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
[illegible]	12-42[illegible]	2/2/9[illegible]

Location of Property (Area & Bldg.)	Contact	Phone
200 WEST AREA 202-ANNEX	RZ STEFFLER	373-9146

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
1-29-93	Org Code 12410 E21241	N/A

Originated By	Date	Authorized By	Date
RZ STEFFLER	1-29-93	JE HYATT	1-29-93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	2/[illegible]

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date				

DISTRIBUTION

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

54-3000-479 (

Signature Security Servic

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W49-[illegible]-0226-14

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to Weston
208 Welch Pool Rd.
Lionville, PA 19341

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 64 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 65 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the [illegible]

Bill of lading # [illegible]

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 [illegible]
Location of Property (Area & Bldg.)	Contact: PH Butcher	Phone: (509) 376-5045
Date Ready for Shipment	Cost Code to be Charged: W[illegible]	Approximate Date This Property will be Returned: N/A
Originated By	Date	Authorized By [illegible] — Date 2/2/93
Signature and Name of Property Control	Custodian Date	Property Management Approval [illegible] — Date 2/2/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 2-2-93				

DISTRIBUTION

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

54-300

Signature Security Servic

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		WM-[illegible]-15

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☐ Contractor ☐ Vendor

Shipped to Weston
298 Welch Pool Rd.
Lionville, PA 19341

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: Cooler ID: Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the [illegible]

Bill of lading # [illegible]

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
		/ /

Location of Property (Area & Bldg.)	Contact	Phone
	PH Butcher	(509) 376-50

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
	[illegible]	N/A

Originated By	Date	Authorized By	Date
		NS Simpson	2/2/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	2/2/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				
Date 2 2 93				

DISTRIBUTION

By Originator	Shipping Operation – Sign all Copies and Forward to:
White, Green, Yellow, Pink – Property Management Goldenrod – Retain	White – Property Management, Green – Property Control Custodian (Issuing Office) Yellow – Retain [redacted]

54-3000-479(

Signature Security Service

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
WHC		W093-0-0224-16

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Eng. & Tech.	Geosciences	Geochem. & Hydrochem.

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

Routing Emery ☒ Contractor ☐ Vendor

Shipped to Weston
208 Welch Pool Rd.
Lionville, PA 19341

Off-site Custodian

Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.	Sample #: [illegible] Cooler ID: [illegible] Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

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

Necessity for the Off-Site Use of this Property

Sampling supports RI/FS work in the [illegible]

Bill of lading # [illegible]-T

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

Location of Property (Area & Bldg.)	Contact	Phone
	DL Butcher	(509) 376-504

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
	[illegible]	N/A

Originated By	Date	Authorized By	Date
		[illegible]	2/2/93

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[illegible]	2/2/93

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[illegible]				
Date 2-2-93				

DISTRIBUTION

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

54-3000-479 (09/8

FORM OF PAYMENT

Check ☐ GBL ☐ FCCOD ☐

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

E Shipper's Account Number 850281585

EMERY WORLDWIDE — A CF Company

SERVICES

UNITED STATES / CANADA: Same Day (Extra Charges) ☐; AM ☒; PM ☐; Second Day ☐; Saturday ☐

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

Date: 02-02-93 (~~01-[illegible]-93~~) Origin: PBC Shipment Number: 253695267 1

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

To:
JOSIE KING
RF WESTON INC
208 WELSH POOL ROAD
LIONVILLE PA 19341
Hold for Pick Up ☐ Canada ☐

Tariff Dest. | Gateway

Check to Shipper $

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

Customer's Reference Numbers: ~~M12410 E21241 W93-0-0190#30~~ 99352

E Consignee's Account Number: 19341

Description	Pcs.	L	W	H	Total Pieces	Total Weight (in lbs.)
COOLER # AUSTIN SAMPLES	1	14	16	17	1	57

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

Declared Value $

253695267 1

Remarks: OVERNIGHT DELIVERY

Shipper's Signature X

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

Mark if Emery Packaging is used: Urgent Letter 9X12 ☐; Urgent Pack 12X15 ☒

International Shipments: Free Domicile ☐; Commodity Code

Third Party Account Number mandatory for Third Party Billing. E Third Party Account Number

International Customs Value | International Insurance

Base Charge

Total Transportation Charges | Other Charges/Advance at Origin ☐ OC/AO $

3-PhL-A

Terms and Conditions on Back

9613408.1944

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

DATE: _____ SHIPMENT NO.: _____
SHIPPER _____
REFERENCE NO.: _____

SHIPPER NAME AND ADDRESS	CONSIGNEE NAME AND ADDRESS

Pieces	Weight	Description/Marks	Emery Authorization No.
	—		

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW.

	Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.				
2.	WD SNYDER	PHL	WD Snyder	1030/3
3.	S Gamble Wilson	[illegible]	[illegible]	[illegible] /3/93
4.				
5.				
6.				
7.				
8.				

SPECIAL HANDLING INSTRUCTIONS

CONSIGNEE COPY

00003

9413100.1945

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 03/01/93 11:16

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Page: 1a

	Cust ID:	BO82F7		BO82D1		BO82W7		BO82L9		BO82D5		BO82C3	
Sample Information	RFW#:	003		006		009		012		015		018	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	Toluene-d8	102	%	104	%	103	%	99	%	102	%	108	%
	Bromofluorobenzene	100	%	101	%	102	%	99	%	103	%	109	%
	1,2-Dichloroethane-d4	97	%	101	%	101	%	103	%	107	%	111	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		3	JB	3	JB	2	JB	2	JB	3	JB	2	JB
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide		10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene		10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)		10	U	10	U	10	U	10	U	10	U	10	U
Chloroform		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane		10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene		10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Benzene		10	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Bromoform		10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Toluene		10	U	10	U	10	U	10	U	10	U	10	U

*= Outside of EPA CLP QC limits.

9613408.1946

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Page: 1b

Cust ID:	B082F7	B082D1	B082W7	B082L9	B082D5	B082C3
RFW#:	003	006	009	012	015	018
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U

*= Outside of EPA CLP QC limits.

9613408.1947 00 00 05 5

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 03/01/93 11:16

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Page: 2a

	Cust ID:	B082B1		B082M3		B082M3		B082M3		B082Y7		B082B5	
Sample Information	RFW#:	021		024		024 MS		024 MSD		027		030	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	Toluene-d8	108	%	105	%	105	%	105	%	110	%	108	%
	Bromofluorobenzene	109	%	106	%	101	%	99	%	106	%	104	%
	1,2-Dichloroethane-d4	112	%	103	%	109	%	98	%	107	%	107	%
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		3	JB	4	JB	2	JB	2	JB	4	JB	4	JB
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide		10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene		10	U	10	U	103	%	95	%	10	U	10	U
1,1-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)		10	U	10	U	10	U	10	U	10	U	10	U
Chloroform		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane		10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene		10	U	10	U	102	%	96	%	10	U	10	U
Dibromochloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Benzene		10	U	10	U	104	%	94	%	10	U	10	U
trans-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Bromoform		10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Toluene		10	U	10	U	102	%	99	%	10	U	10	U

*= Outside of EPA CLP QC limits.

0 0 0 0 5 7
9613408.1948

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Page: 2b

Cust ID:	BO82B1	BO82M3	BO82M3	BO82M3	BO82X7	BO82B5
RFW#:	021	024	024 MS	024 MSD	027	030
Chlorobenzene	10 U	10 U	102 %	98 %	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U

*= Outside of EPA CLP QC limits.

9613408.1949 00058

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Report Date: 03/01/93 11:16 Page: 3a

	Cust ID:	BO8293		BO82C7		BO82B9		BO82J5		VBLK		VBLK	
Sample Information	RFW#:	033		036		039		042		93LVK023-MB1		93LVK024-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	Toluene-d8	109	%	107	%	106	%	107	%	102	%	107	%
	Bromofluorobenzene	102	%	102	%	103	%	101	%	99	%	103	%
	1,2-Dichloroethane-d4	109	%	109	%	108	%	106	%	96	%	104	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		4	JB	1	JB	1	JB	8	JB	4	J	4	J
Acetone		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide		10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene		10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)		10	U	10	U	10	U	10	U	10	U	10	U
Chloroform		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane		10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene		10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Benzene		10	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene		10	U	10	U	10	U	10	U	10	U	10	U
Bromoform		10	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Toluene		10	U	10	U	10	U	10	U	10	U	10	U

*= Outside of EPA CLP QC limits.

9613408.1950 0000059

RFW Batch Number: 9302L495 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-0 Page: 3b

Cust ID:	BO8293	BO82C7	BO82B9	BO82J5	VBLK	VBLK
RFW#:	033	036	039	042	93LVK023-MB1	93LVK024-MB1
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U

*= Outside of EPA CLP QC limits.

9613408.1951 0000060

9613408.1952 0000078

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082F7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2911

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1953

1E

0000079

CLIENT SAMPLE NO.

B082F7

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2911

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1954 0000084

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082D1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2912

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO82D1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2912

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1956 0000090

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082W7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-009

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2913

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1957 0000091

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO82W7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-009

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2913

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1958

1A

0000098

CLIENT SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

BO82L9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-012

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2914

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1959

1E

0000097

CLIENT SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BO82L9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-012

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2914

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082D5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-015

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2915

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1961 0000103

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO82D5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-015

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2915

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1962 0000108

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BO82C3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-018

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2916

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO82C3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-018

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2916

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1964 0000114

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082B1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-021

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2917

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082B1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-021

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2917

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1966 0000120

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082M3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-024

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2918

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082M3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-024

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2918

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1968 0000128

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082Y7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-027

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A11

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082Y7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-027

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A11

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082B5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-030

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A12

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1971 0000133

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082B5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-030

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A12

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1972

1A

0000133

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B08293

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-033

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A13

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1973 0000139

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO8293

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-033

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A13

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1974 000044

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082C7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-036

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A14

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

9613408.1975 0000145

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082C7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-036

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A14

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

9613408.1976 0000150

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B082B9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-039

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A15

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082B9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-039

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A15

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BO82J5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-042

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A16

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B082J5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-042

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A16

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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

Client : WESTINGHOUSE HANFORD
RFW# : 9302L495

W.O. #: 06168-002-001-9999-00
Date Received: 02-03-93

INORGANIC

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. Sample holding times as required by 40CFR136 were met with the exception of Phosphate by IC which was received past hold.

2. All preparation blank results were below the required detection limit.

3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.

4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.

5. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. Recoveries were within the 75-125% guidance limits with the exception of Nitrate Nitrite. All %RPD were within the 20% guidance limit.

6. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.

7. The analytical methods applied by the laboratory, unless otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), Standard Methods for the Examination of Water and Wastewater 16 ed and Test Methods for Evaluating Solid Waste (USEPA SW846).

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

3.3.93
Date

ncc/i02-495

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BO82F4	Alkalinity	110		MG/L	2.0
		Chloride by IC	6.7		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	20.0	u	UG/L	20.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	33.3		MG/L	2.5
		Nitrate Nitrite	8.5		MG-N/L	1.0
		Total Dissolved Solids	284		MG/L	5.0
-004	BO82C8	Alkalinity	100		MG/L	2.0
		Chloride by IC	5.9		MG/L	0.25
		Fluoride by IC	0.51		MG/L	0.50
		Cyanide, Total	16.3		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	36.9		MG/L	2.5
		Nitrate Nitrite	0.36		MG-N/L	0.10
		Total Dissolved Solids	137		MG/L	5.0
-007	BO82W4	Alkalinity	105		MG/L	2.0
		Chloride by IC	9.0		MG/L	0.25
		Fluoride by IC	0.79		MG/L	0.50
		Cyanide, Total	14.7		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	39.8		MG/L	2.5
		Nitrate Nitrite	0.60		MG-N/L	0.10
		Total Dissolved Solids	5.0	u	MG/L	5.0
-010	BO82L6	Alkalinity	100		MG/L	2.0
		Chloride by IC	131.5		MG/L	5.0
		Fluoride by IC	0.54		MG/L	0.50
		Cyanide, Total	24.7		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	97.3		MG/L	5.0
		Nitrate Nitrite	2.5		MG-N/L	0.25
		Total Dissolved Solids	283		MG/L	5.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-013	BO82D2	Alkalinity	110		MG/L	2.0
		Chloride by IC	5.8		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	34.1		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	28.3		MG/L	2.5
		Nitrate Nitrite	13.4		MG-N/L	1.0
		Total Dissolved Solids	267		MG/L	5.0
-016	BO82C0	Alkalinity	100		MG/L	2.0
		Chloride by IC	9.0		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	41.5		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	17.4		MG/L	2.5
		Nitrate Nitrite	11.6		MG-N/L	1.0
		Total Dissolved Solids	234		MG/L	5.0
-019	BO8298	Alkalinity	100		MG/L	2.0
		Chloride by IC	5.8		MG/L	0.25
		Fluoride by IC	0.96		MG/L	0.50
		Cyanide, Total	33.7		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	35.7		MG/L	2.5
		Nitrate Nitrite	16.0		MG-N/L	2.0
		Total Dissolved Solids	309		MG/L	5.0
-022	BO82M0	Alkalinity	110		MG/L	2.0
		Chloride by IC	22.9		MG/L	5.0
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	10.0	u	UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	108		MG/L	5.0
		Nitrate Nitrite	3.7		MG-N/L	1.0
		Total Dissolved Solids	351		MG/L	5.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WESTON BATCH #: 9302L495
WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-025	BO82Y4	Alkalinity	100		MG/L	2.0
		Chloride by IC	13.7		MG/L	5.0
		Fluoride by IC	0.57		MG/L	0.50
		Cyanide, Total	10.0	u	UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	96.0		MG/L	5.0
		Nitrate Nitrite	2.9		MG-N/L	1.0
		Total Dissolved Solids	287		MG/L	5.0
-028	BO82B2	Alkalinity	105		MG/L	2.0
		Chloride by IC	7.4		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	21.8		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	33.7		MG/L	2.5
		Nitrate Nitrite	9.3		MG-N/L	1.0
		Total Dissolved Solids	236		MG/L	5.0
-031	BO8290	Alkalinity	110		MG/L	2.0
		Chloride by IC	6.3		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	10.2		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	30.8		MG/L	2.5
		Nitrate Nitrite	15.7		MG-N/L	1.0
		Total Dissolved Solids	227		MG/L	5.0
-034	BO82C4	Alkalinity	110		MG/L	2.0
		Chloride by IC	6.7		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	14.0		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	33.0		MG/L	2.5
		Nitrate Nitrite	12.6		MG-N/L	1.0
		Total Dissolved Solids	261		MG/L	5.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-037	B082B6	Alkalinity	100		MG/L	2.0
		Chloride by IC	5.6		MG/L	0.25
		Fluoride by IC	0.97		MG/L	0.50
		Cyanide, Total	28.6		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	36.1		MG/L	2.5
		Nitrate Nitrite	14.9		MG-N/L	2.5
		Total Dissolved Solids	294		MG/L	5.0
-040	B082J2	Alkalinity	100		MG/L	2.0
		Chloride by IC	6.9		MG/L	0.25
		Fluoride by IC	0.50	u	MG/L	0.50
		Cyanide, Total	15.0		UG/L	10.0
		Phosphate by IC	0.25	u	MG/L	0.25
		Sulfate by IC	34.5		MG/L	2.5
		Nitrate Nitrite	11.0		MG-N/L	2.5
		Total Dissolved Solids	274		MG/L	5.0

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

Client: WESTINGHOUSE HANFORD
RFW #: 9302L495

W.O. #: 06168-002-001-9999-00
Date Received: 02-03-93

CLP METALS

1. This narrative covers the analysis of twenty-eight (28) water 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 form Inorganic Ventures Laboratory.

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 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.

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

Element	Sample #'s	Element	Sample #'s
Lead	031	Selenium	010
	035		022
			023
			025

WESTON

13. 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	Lead	74.0

A Post-Matrix Spike analysis was performed for those ICP elements that did not meet the specified control limits (exception allowed for Ag).

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

14. All Matrix Spike Duplicates were within the 20% Relative Percent Difference (RPD) control limits.

15. 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.

16. 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).

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

18. 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.

19. Solubles and totals were digested within the same digestion batch; therefore, will have the same flags.

Raymond A. Siery
Inorganic Section Manager
Lionville Analytical Laboratory

3.8.93
Date

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

Client: WESTINGHOUSE HANFORD
RFW #: 9302L495

W.O. #: 06168-002-001-9999-00
Date Received: 02-03-93

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

3.8.93
Date

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	B082F4	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	34600		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	154		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	1530		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	10700		UG/L	5000
		Manganese, Total	36.6		UG/L	15.0
		Sodium, Total	20500		UG/L	5000
		Nickel, Total	69.3		UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-002	B082F6	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	29500		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5090		UG/L	5000
		Magnesium, Soluble	9060		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	18300		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-004	B082C8	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.4		UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	26700		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	149		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	1640		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5550		UG/L	5000
		Magnesium, Total	7640		UG/L	5000
		Manganese, Total	23.4		UG/L	15.0
		Sodium, Total	20300		UG/L	5000
		Nickel, Total	68.9		UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-005	B082D0	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	27100		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	6600		UG/L	5000
		Magnesium, Soluble	7710		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	21300		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-007	B082W4	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	29100		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	966		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	7010		UG/L	5000
		Magnesium, Total	9020		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	24600		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9302L495

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-008	BO82W6	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	28000		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	6060		UG/L	5000
		Magnesium, Soluble	8630		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	24500		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9302L495

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-010	BO82L6	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	45300		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	73.7		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	306		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	7750		UG/L	5000
		Magnesium, Total	13000		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	21500		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.4		UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-011	BO82L8	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	43600		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.5		UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	7960		UG/L	5000
		Magnesium, Soluble	12500		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	21600		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-013	B082D2	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.9		UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	34400		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	100	u	UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000		UG/L	5000
		Magnesium, Total	10700		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	20800		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-014	B082D4	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	33600		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5370		UG/L	5000
		Magnesium, Soluble	10400		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	21100		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-016	B082C0	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	26200		UG/L	5000
		Cadmium, Total	9.2		UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	100	u	UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	7370		UG/L	5000
		Magnesium, Total	7770		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	22800		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9302L495

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-017	B082C2	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	26400		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	8390		UG/L	5000
		Magnesium, Soluble	7780		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	23900		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-019	BO8298	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	11.9		UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	34700		UG/L	5000
		Cadmium, Total	10.4		UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	18.2		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	334		UG/L	100
		Mercury, Total	0.36		UG/L	0.20
		Potassium, Total	5850		UG/L	5000
		Magnesium, Total	9770		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	24400		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9302L495

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-020	B082B0	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	29300		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	12.3		UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.33		UG/L	0.20
		Potassium, Soluble	5620		UG/L	5000
		Magnesium, Soluble	8240		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	21400		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-022	BO82M0	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	48100		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	17.1		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	100	u	UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	7800		UG/L	5000
		Magnesium, Total	14400		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	28000		UG/L	5000
		Nickel, Total	52.2		UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-023	B082M2	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	41900		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	7050		UG/L	5000
		Magnesium, Soluble	12500		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	25200		UG/L	5000
		Nickel, Soluble	41.1		UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	15.6		UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-025	B082Y4	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	36500		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	53.0		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	237		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000		UG/L	5000
		Magnesium, Total	10500		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	17300		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-026	B082Y6	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	45400		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	8930		UG/L	5000
		Magnesium, Soluble	12900		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	22200		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

9613408.2006 0000081

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-028	B082B2	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	32400		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	244		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	10000		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	16300		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.8		UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

9613408.2007

0000082

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-029	B082B4	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	29500		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	11.9		UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5140		UG/L	5000
		Magnesium, Soluble	9130		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	15400		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

9613408.2008

000038

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9302L495

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-031	B08290	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.6		UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	35900		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	100	u	UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	11900		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	21800		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	43.2		UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-032	BO8292	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	27900		UG/L	5000
		Cadmium, Soluble	5.3		UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	12.7		UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5000	u	UG/L	5000
		Magnesium, Soluble	9290		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	17500		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

9613408.2010 000008F

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-034	B082C4	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	33100		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	10.0	u	UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	100	u	UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	11700		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	17500		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.0	u	UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-035	BO82C6	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	32500		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5000	u	UG/L	5000
		Magnesium, Soluble	11500		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	17800		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-037	B082B6	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.6		UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	31200		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	32.2		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	555		UG/L	100
		Mercury, Total	0.32		UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	8640		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	21200		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.1		UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-038	B082B8	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	34700		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	14.1		UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.32		UG/L	0.20
		Potassium, Soluble	5820		UG/L	5000
		Magnesium, Soluble	9700		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	24200		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-040	B082J2	Silver, Total	10.0	u	UG/L	10.0
		Aluminum, Total	200	u	UG/L	200
		Arsenic, Total	10.0	u	UG/L	10.0
		Barium, Total	200	u	UG/L	200
		Beryllium, Total	5.0	u	UG/L	5.0
		Bismuth, Total	150	u	UG/L	150
		Calcium, Total	35100		UG/L	5000
		Cadmium, Total	5.0	u	UG/L	5.0
		Cobalt, Total	50.0	u	UG/L	50.0
		Chromium, Total	79.0		UG/L	10.0
		Copper, Total	25.0	u	UG/L	25.0
		Iron, Total	310		UG/L	100
		Mercury, Total	0.20	u	UG/L	0.20
		Potassium, Total	5000	u	UG/L	5000
		Magnesium, Total	10600		UG/L	5000
		Manganese, Total	15.0	u	UG/L	15.0
		Sodium, Total	20500		UG/L	5000
		Nickel, Total	40.0	u	UG/L	40.0
		Lead, Total	3.4		UG/L	3.0
		Antimony, Total	60.0	u	UG/L	60.0
		Selenium, Total	5.0	u	UG/L	5.0
		Thallium, Total	10.0	u	UG/L	10.0
		Vanadium, Total	50.0	u	UG/L	50.0
		Zinc, Total	20.0	u	UG/L	20.0

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/04/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-041	BO82J4	Silver, Soluble	10.0	u	UG/L	10.0
		Aluminum, Soluble	200	u	UG/L	200
		Arsenic, Soluble	10.0	u	UG/L	10.0
		Barium, Soluble	200	u	UG/L	200
		Beryllium, Soluble	5.0	u	UG/L	5.0
		Bismuth, Soluble	150	u	UG/L	150
		Calcium, Soluble	32000		UG/L	5000
		Cadmium, Soluble	5.0	u	UG/L	5.0
		Cobalt, Soluble	50.0	u	UG/L	50.0
		Chromium, Soluble	10.0	u	UG/L	10.0
		Copper, Soluble	25.0	u	UG/L	25.0
		Iron, Soluble	100	u	UG/L	100
		Mercury, Soluble	0.20	u	UG/L	0.20
		Potassium, Soluble	5670		UG/L	5000
		Magnesium, Soluble	9640		UG/L	5000
		Manganese, Soluble	15.0	u	UG/L	15.0
		Sodium, Soluble	19000		UG/L	5000
		Nickel, Soluble	40.0	u	UG/L	40.0
		Lead, Soluble	3.0	u	UG/L	3.0
		Antimony, Soluble	60.0	u	UG/L	60.0
		Selenium, Soluble	5.0	u	UG/L	5.0
		Thallium, Soluble	10.0	u	UG/L	10.0
		Vanadium, Soluble	50.0	u	UG/L	50.0
		Zinc, Soluble	20.0	u	UG/L	20.0

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082F4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249501

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.70	B		F
7440-39-3	Barium	33.80	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	34600.00			P
7440-47-3	Chromium	154.00			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	1530.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	10700.00			P
7439-96-5	Manganese	36.60			P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	69.30			P
7440-09-7	Potassium	4690.00	B		P
7782-49-2	Selenium	2.30	B	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	20500.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	19.50	B		P
7440-66-6	Zinc	11.00	B		P
	Cyanide	20.00	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2017

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082F6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249502

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.20	B		F
7440-39-3	Barium	30.50	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	29500.00			P
7440-47-3	Chromium	9.20	B		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	20.60	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9060.00			P
7439-96-5	Manganese	3.70	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5090.00			P
7782-49-2	Selenium	2.20	B	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	18300.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	17.90	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082C8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249504

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	10.40		W	F
7440-39-3	Barium	30.20	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.60	B		P
7440-70-2	Calcium	26700.00			P
7440-47-3	Chromium	149.00			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	13.50	B		P
7439-89-6	Iron	1640.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	7640.00			P
7439-96-5	Manganese	23.40			P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	68.90			P
7440-09-7	Potassium	5550.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	20300.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	26.60	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide	16.30			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082D0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249505

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.10	B		F
7440-39-3	Barium	34.40	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	27100.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	19.10	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	7710.00			P
7439-96-5	Manganese	2.80	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	6600.00			P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21300.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	22.70	B		P
7440-66-6	Zinc	11.30	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082W4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249507

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	6.50	B	W	F
7440-39-3	Barium	22.10	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	29100.00			P
7440-47-3	Chromium	9.00	B		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	966.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9020.00			P
7439-96-5	Manganese	8.40	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	7010.00			P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	24600.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	24.00	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide	14.70			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2021

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082W6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249508

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	5.10	B		F
7440-39-3	Barium	20.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	28000.00			P
7440-47-3	Chromium	7.00			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	11.10	B		P
7439-89-6	Iron	13.40	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	8630.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	6060.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	24500.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	21.20	B		P
7440-66-6	Zinc	11.90	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2022

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082L6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249510

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.10	B	W	F
7440-39-3	Barium	28.90	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	45300.00			P
7440-47-3	Chromium	73.70			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	306.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	13000.00			P
7439-96-5	Manganese	4.90	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	23.70	B		P
7440-09-7	Potassium	7750.00			P
7782-49-2	Selenium	5.40		S	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21500.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	25.00	B		P
7440-66-6	Zinc	10.70	B		P
	Cyanide	24.70			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2023

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082L8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249511

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	5.10	B		F
7440-39-3	Barium	32.70	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	43600.00			P
7440-47-3	Chromium	10.50			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	13.10	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	12500.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	7960.00			P
7782-49-2	Selenium	2.80	B	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21600.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	25.00	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2024

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082D2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249513

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	10.90		W	F
7440-39-3	Barium	38.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	34400.00			P
7440-47-3	Chromium	7.30	B		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	14.10	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	10700.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5000.00			P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	20800.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	25.10	B		P
7440-66-6	Zinc	8.10	B		P
	Cyanide	34.10			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2025

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BO82D4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249514

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.20	B		F
7440-39-3	Barium	34.80	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	33600.00			P
7440-47-3	Chromium	7.30	B		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	10.00	U		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	10400.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5370.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21100.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	22.70	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2026

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082C0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249516

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	2.10	B	W	F
7440-39-3	Barium	76.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	9.20			P
7440-70-2	Calcium	26200.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	43.30	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	7770.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.12	B		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	7370.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	22800.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	13.00	B		P
7440-66-6	Zinc	17.10	B		P
	Cyanide	41.50			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2027

0000116

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082C2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249517

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	84.20	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	26400.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	30.80	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	7780.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	8390.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	23900.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	12.70	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08298

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249519

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	11.90		W	F
7440-39-3	Barium	23.10	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	10.40			P
7440-70-2	Calcium	34700.00			P
7440-47-3	Chromium	18.20			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	334.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9770.00			P
7439-96-5	Manganese	7.10	B		P
7439-97-6	Mercury	.36			CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5850.00			P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	24400.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	25.50	B		P
7440-66-6	Zinc	19.70	B		P
	Cyanide	33.70			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082B0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249520

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	8.50	B		F
7440-39-3	Barium	16.70	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	29300.00			P
7440-47-3	Chromium	12.30			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	21.20	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	8240.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.33			CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5620.00			P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21400.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	19.40	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2030

000119

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082M0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249522

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.30	B	W	F
7440-39-3	Barium	25.70	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	48100.00			P
7440-47-3	Chromium	17.10			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	82.10	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	14400.00			P
7439-96-5	Manganese	7.00	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	52.20			P
7440-09-7	Potassium	7800.00			P
7782-49-2	Selenium	4.70	B	S	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	28000.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	22.80	B		P
7440-66-6	Zinc	13.90	B		P
	Cyanide	10.00	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082M2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249523

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	4.70	B		F
7440-39-3	Barium	23.80	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	41900.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	17.90	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	12500.00			P
7439-96-5	Manganese	4.70	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	41.10			P
7440-09-7	Potassium	7050.00			P
7782-49-2	Selenium	15.60		S+	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	25200.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	18.40	B		P
7440-66-6	Zinc	14.50	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
Selenium - MSA r = 0.9919 - best of two runs.

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082Y4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249525

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.80	B	W	F
7440-39-3	Barium	25.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	36500.00			P
7440-47-3	Chromium	53.00			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	237.00			P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	10500.00			P
7439-96-5	Manganese	4.90	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5000.00			P
7782-49-2	Selenium	4.80	B	S	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	17300.00			P
7440-28-0	Thallium	2.20	B		F
7440-62-2	Vanadium	23.20	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide	10.00	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082Y6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249526

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	5.50	B		F
7440-39-3	Barium	33.40	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	45400.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	10.00	B		P
7439-89-6	Iron	11.70	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	12900.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	8930.00			P
7782-49-2	Selenium	3.00	B	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	22200.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	27.90	B		P
7440-66-6	Zinc	8.00			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082B2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249528

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	8.00	B	W	F
7440-39-3	Barium	26.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	32400.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	244.00			P
7439-92-1	Lead	3.80		NW	F
7439-95-4	Magnesium	10000.00			P
7439-96-5	Manganese	7.50	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	4840.00	B		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	16300.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	21.90	B		P
7440-66-6	Zinc	10.10	B		P
	Cyanide	21.80			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2035

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082B4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249529

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	6.30	B		F
7440-39-3	Barium	28.80	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	29500.00			P
7440-47-3	Chromium	11.90			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	20.60	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9130.00			P
7439-96-5	Manganese	2.80	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5140.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	15400.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	19.80	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08290

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249531

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	10.60		W	F
7440-39-3	Barium	27.90	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	35900.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	45.00	B		P
7439-92-1	Lead	43.20		NS	F
7439-95-4	Magnesium	11900.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	4290.00	B		P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21800.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	24.60	B		P
7440-66-6	Zinc	9.00	B		P
	Cyanide	10.20			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08292

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249532

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	8.10	B		F
7440-39-3	Barium	23.40	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	5.30			P
7440-70-2	Calcium	27900.00			P
7440-47-3	Chromium	12.70			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	10.00	U		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9290.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	3370.00	B		P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	17500.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	16.10	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082C4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249534

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	9.30	B	W	F
7440-39-3	Barium	27.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	33100.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	89.70	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	11700.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	4700.00	B		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	17500.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	21.90	B		P
7440-66-6	Zinc	14.40	B		P
	Cyanide	14.00			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2039

000128

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082C6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249535

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.70	B		F
7440-39-3	Barium	27.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	32500.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	10.00	U		P
7439-92-1	Lead	2.00	U	NS	F
7439-95-4	Magnesium	11500.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	4350.00	B		P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	17800.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	17.90	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2040

0000129

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082B6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249537

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	10.60		W	F
7440-39-3	Barium	17.90	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.40	B		P
7440-70-2	Calcium	31200.00			P
7440-47-3	Chromium	32.20			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	555.00			P
7439-92-1	Lead	3.10		N	F
7439-95-4	Magnesium	8640.00			P
7439-96-5	Manganese	10.60	B		P
7439-97-6	Mercury	.32			CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	4590.00	B		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	21200.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	22.30	B		P
7440-66-6	Zinc	16.80	B		P
	Cyanide	28.60			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082B8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249538

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	9.00	B		F
7440-39-3	Barium	21.30	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	34700.00			P
7440-47-3	Chromium	14.10			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	11.10	B		P
7439-89-6	Iron	15.20	B		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9700.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.32			CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5820.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	24200.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	23.60	B		P
7440-66-6	Zinc	8.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082J2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249540

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	9.70	B	W	F
7440-39-3	Barium	28.90	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	35100.00			P
7440-47-3	Chromium	79.00			P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	310.00			P
7439-92-1	Lead	3.40		NW	F
7439-95-4	Magnesium	10600.00			P
7439-96-5	Manganese	7.10	B		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	30.60	B		P
7440-09-7	Potassium	4830.00	B		P
7782-49-2	Selenium	2.00	U		F
7440-22-4	Silver	7.00	U		P
7440-23-5	Sodium	20500.00			P
7440-28-0	Thallium	2.00	U	W	F
7440-62-2	Vanadium	27.30	B		P
7440-66-6	Zinc	10.70	B		P
	Cyanide	15.00			C

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B082J4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249541

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.00	U		P
7440-36-0	Antimony	57.00	U		P
7440-38-2	Arsenic	7.20	B		F
7440-39-3	Barium	27.70	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	4.00	U		P
7440-70-2	Calcium	32000.00			P
7440-47-3	Chromium	7.00	U		P
7440-48-4	Cobalt	8.00	U		P
7440-50-8	Copper	9.00	U		P
7439-89-6	Iron	10.00	U		P
7439-92-1	Lead	2.00	U	NW	F
7439-95-4	Magnesium	9640.00			P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.10	U		CV
7440-02-0	Nickel	19.00	U		P
7440-09-7	Potassium	5670.00			P
7782-49-2	Selenium	2.00	U	W	F
7440-22-4	Silver	7.60	B		P
7440-23-5	Sodium	19000.00			P
7440-28-0	Thallium	2.00	U		F
7440-62-2	Vanadium	23.10	B		P
7440-66-6	Zinc	8.20	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

9613408.2044 9302L495-WES-1025

MEMORANDUM

TO: 200-BP-1 Project QA Record April 30, 1993

FR: Susan Winter, Golder Associates Inc.

RE: VOLATILE ORGANIC ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9302L495-WES-1025

INTRODUCTION

This memo presents the results of data validation on data package 9302L495-WES-1025 consisting of fourteen (14) low level water samples submitted for volatile organic analysis. The samples were analyzed by Weston Analytics according to the CLP protocol for TCL volatile compounds. A list of the samples validated is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA
B082F7	02/01/93	WATER
B082D1	02/01/93	WATER
B082W7*	02/01/93	WATER
B082L9	01/31/93	WATER
B082D5	02/01/93	WATER
B082C3	02/01/93	WATER
B082B1	01/30/93	WATER
B082M3	01/31/93	WATER
B082Y7*	01/31/93	WATER
B082B5	01/30/93	WATER
B08293	01/30/93	WATER
B082C7	01/30/93	WATER
B082B9	01/30/93	WATER
B082J5*	01/30/93	WATER

Data validation was conducted in accordance with the revised WHC statement of work (WHC 1993) and validation procedures (Bechtold 1992) in which twenty percent (20%) of the samples, marked with an asterisk (*), were randomly assigned for validation. Attachments 1 through 4 to this memo provide the data validation supporting documentation and a summary of the validated results.

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met.

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

Detection Limits. Detection limit goals were met for all associated compounds.

Completeness. The data package was complete for all requested analyses. Fourteen samples were validated in this data set with a total of 462 determinations reported, out of which 448 were deemed valid which results in a completeness of 97 percent which meets the work plan objectives of 90%.

MAJOR DEFICIENCIES

All sample results for 1,1,2,2-tetrachloroethane were rejected (UR) since the relative response factors in the initial and continuing calibration verification standards were below the control limit of 0.500.

MINOR DEFICIENCIES

Laboratory Blanks

Methylene chloride was detected in the laboratory blanks at a concentration of 4 µg/L. All associated sample results were less than ten times the respective blank concentration (40 µg/L), and therefore have been qualified as undetected (U).

REFERENCES

WHC, 1993, Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision F, April 1993. Westinghouse Hanford Company, Richland, Washington.

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

9613408.2046

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

9613408.2047

GLOSSARY OF ORGANIC DATA REPORTING QUALIFIERS

B - Indicates the compound was analyzed for and detected in the associated blank. The "B" qualifier for organic data is applied by the laboratory only and is not applied by the data validators.

U - Indicates the compound was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory. The data are usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the sample quantitation limit. The data are usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data are usable for decision making purposes.

UR - Indicates the compound was analyzed for and not detected; however, due to an identified quality control deficiency the data are unusable.

R - Indicates the compound was analyzed for and detected; however, due to an identified quality control deficiency the data are unusable.

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

N - Indicates presumptive evidence of a compound.

9613408.2048

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

9613408.2049

DATA QUALIFICATION SUMMARY - FORM B-7

9302L495-WES-1025

SDG:	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 1 OF 1
COMMENTS: Volatiles			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
1,1,2,2-Tetra chloroethane	~~J/UJ~~ UR	All	ICV & CCV RRF < 0.500.
	Since all results are ND		
	4/30/93		
$MeCl_2$	U	All	Present in blanks

9613408.2050

ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

9613408.2051

0000078

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-26

BO82F7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2911

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~J~~	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	R UR
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

4/30/93

FORM 1 VOA Verified 3/90

9613408.2052

0000084

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-14

BO82D1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2912

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~8~~	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	KLR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA verified 3/90

9613408.2053

0000090

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
699-60-60

BO82W7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-009

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2913

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	+ 10 ~~2~~	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	R UR
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

4/30/93

FORM 1 VOA Verified Validated 3/90

9613408.2054

0000096

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E34-2

BO82L9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-012

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2914

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~2~~	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	K UR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2055

0000102

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-15

BO82D5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-015

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2915

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~5~~	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	RUR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2056

0000108

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-12

B082C3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-018

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2916

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~2~~	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	R UR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2057

0000114

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-4

BO82B1

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-021

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2917

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~8~~	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	R UR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2058 0000120

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E34-5

BO82M3

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-024

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2918

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	R UR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2059

0000128

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
2-E34-2 Duplicate

B082Y7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-027

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A11

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	K UR
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

4/30/93

FORM 1 VOA Verified validate 3/90

9613408.2060

0000132

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-5

BO82B5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-030

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A12

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	UR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2061

0000138

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-1

B08293

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-033

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A13

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~8~~	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	~~R~~ UR
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/13/93

4/30/93

FORM 1 VOA Verified 3/90

9613408.2062

0000144

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-13

B082C7

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-036

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A14

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~2~~	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	~~X~~ UR @ 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

9613408.2063

0000150

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-7

B082B9

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-039

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A15

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 X	~~JB~~	U
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	RWR 4/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified 3/90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
299-E33-34

B082J5

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 9302L495-042

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A16

Level: (low/med) LOW

Date Received: 02/03/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Q
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~8~~	~~JB~~	u
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	~~U~~	~~X~~ UR 04/30/93
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

FORM 1 VOA Verified Validate 3/90

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ATTACHMENT 4

DATA VALIDATION SUPPORTING DOCUMENTATION

VOLATILE ORGANIC DATA VALIDATION CHECKLIST - FORM A-1

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 4/30/93
LABORATORY: Weston	CASE:	SDG: 9302L495 -WES-1025
SAMPLES/MATRIX: Waters		
B082F7	B08205	B08247	B08289
01	C3	B5	J5
W7	B1	93	
L9	M3	C7	

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?: Yes	No	N/A
Case Narrative	✓	—	—
Data Summary	✓	—	—
Chain-of-Custody	✓	—	—
QC Summary			
Surrogate report	✓	—	—
MS/MSD report	✓	—	—
Blank summary report	✓	—	—
GC/MS tuning report	✓	—	—
Internal standard summary report	✓	—	—
Sample Data			
Sample reports	✓	—	—
TIC reports for each sample	✓	—	—
RIC reports for all samples	✓	—	—
Raw and corrected spectra for all detected results	✓	—	—
Raw and corrected library search data for all reported TIC	—	—	✓
Quantitation and calculation data for all TIC	—	—	✓
Standards Data			
Initial calibration report	✓	—	—
RIC and quantitation reports for initial calibration	✓	—	—
Continuing calibration reports	✓	—	—
RIC and quantitation reports for cont. calibrations	✓	—	—
Internal standard summary report	✓	—	—
Raw QC Data			
Tuning report, spectra and mass lists	✓	—	—
Blank analysis reports	✓	—	—
TIC reports for all blanks	✓	—	—
RIC and quantitation reports for blanks	✓	—	—
Raw and corrected spectra for all detected results in blanks	✓	—	—
Raw and corrected library search data for all reported TIC	—	—	✓

Data Package Item	Present?: Yes	No	N/A
Quantitation and calculation data for all TIC			✓
MS/MSD report forms	✓		
RIC and quantitation reports for MS/MSD	✓		
Additional Data			
Moisture/% solids data sheets			✓
Reduction formulae			✓
Instrument time logs	✓		
Chemist notebook pages			✓
Sample preparation sheets	✓		

2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? (Yes) No N/A

ACTION: If any holding times were exceeded, but not by greater than a factor of two, qualify associated samples as estimated (J for detects or UJ for nondetects), otherwise reject all nondetects (R) and qualify all associated detects as estimated (J).

3. INSTRUMENT CALIBRATION, TUNING AND PERFORMANCE CHECKS

3.1 GC/MS TUNING AND PERFORMANCE CHECKS

Is a bromofluorobenzene tune report present for each applicable 12-h period? (Yes) No N/A

Do all tunes on all instruments meet the tuning criteria? (Yes) No N/A

Do all tunes on all instruments meet the expanded criteria? Yes No (N/A)

Has the laboratory made any calculation or transciption errors? Yes (No) N/A

Have the proper significant figures been reported? (Yes) No N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for nondetects). If all tuning criteria are missed, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments? (Yes) No N/A

Are all RSD values ≤30% (2/88 SOW)? Yes No (N/A)

Are all RRF values ≥0.05 (2/88 SOW)? Yes No (N/A)

Are all applicable RSD values ≤20.5% (3/90 SOW)?	Yes	No	N/A
Are all applicable RSD values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all applicable RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for nondetects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12-h periods in which associated samples were analyzed?	Yes	No	N/A
Are all RRF values ≥0.05 (2/88 SOW)?	Yes	No	N/A
Are all %D values ≤25% (2/88 or 3/90 SOW)?	Yes	No	N/A
Are all %D values ≤40% (3/90 SOW)?	Yes	No	N/A
Are all RRF values within SOW limits (3/90 SOW)?	Yes	No	N/A
Are all erratic performance compound RRF values ≥0.01 (3/90 SOW)?	Yes	No	N/A

ACTION: With the exception of compounds that exhibit erratic performance and making allowances for up to two TCL compounds, if any RRF value is out of specification qualify all associated detected results as estimated and all nondetects as unusable (R). Making allowances for up to two TCL compounds, if any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for nondetects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every 12-h period in which samples were analyzed?	Yes	No	N/A
Are TCL compounds present in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results ≤10 time the highest blank concentration for the common laboratory contaminants, as nondetects (U) or at the SQL if the result is <CRQL. Qualify all remaining sample results ≤5 times the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No N/A

ACTION: Qualify all detected sample results ≤5 times the amount in any valid field blank as nondetects (U) and note the field blank results in the validation narrative.

5. ACCURACY

5.1 SURROGATE/SYSTEM MONITORING COMPOUND RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries <10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for nondetects) for surrogates out of specification but >10%. Qualify all associated positive sample results as estimated (J) and all nondetect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If MS/MSD recoveries are out of specification and sample concentration is >5 times the spike concentration, no qualification is required, otherwise qualify results as follows: Qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J) in all samples if associated surrogates are also out of specification. The qualification shall only be done on samples of similar matrix as the MS/MSD samples. If it is determined from the review that only the spiked samples are affected by low recoveries, qualify only the results for the spiked sample as described above. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

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

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

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If MS/MSD RPDs are out of specification and sample results are >5xCRQL qualify positive results for the specific class of compound (aromatics and non-aromatics) as estimated (J). If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? See comments Yes No N/A

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

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

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

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for nondetects). If it is determined from the review that out of specification area counts and relative retention times are indicative of systematic problems within the laboratory the reviewer may consider rejection of all affected sample data (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? Yes No N/A

Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? Yes No N/A

Do the relative intensities between the standard and sample spectra agree within 20%? Yes No N/A

Have all ions >10% in the sample spectra that are not present in the standard spectra been reviewed for possible background contamination? Yes No N/A

Are molecular ions present in the reference specrum present in the sample spectrum? Yes No N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation? Yes No N/A

Are results and quantitation limits calculated properly? Yes No N/A

Has the laboratory reported the sample quantitation limits within 5xCRQL values? Yes No N/A

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? Yes No N/A

Has the laboratory properly identified and coded all TIC? Yes No N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as nondetects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as nondetects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? **Yes** No N/A

Were project specific data quality objectives met for this analysis? According to 90 SOW. **Yes** No N/A

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10.0 of the data validation requirements.

COMMENTS (attach additional sheets as necessary):

1) Sample B08247 was identified as a field duplicate of site location 2-E34-2. However - since the corresponding sample data is not currently available - the RPD could not be determined.

2) The project specific reporting limit of 5 ug/L for some of the volatile samples was not met since the samples were analyzed according to the 90 SOW in which all reporting limits (CRQL) are 10 ug/L.

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Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
WESTINGHOUSE HANFORD

DATE RECEIVED: 02/03/93 RFW LOT # :9302L495

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BO82F7	003	W	93LVK023	02/01/93	N/A	02/09/93
BO82D1	006	W	93LVK023	02/01/93	N/A	02/09/93
BO82W7	009	W	93LVK023	02/01/93	N/A	02/09/93
BO82L9	012	W	93LVK023	01/31/93	N/A	02/09/93
BO82D5	015	W	93LVK023	02/01/93	N/A	02/09/93
BO82C3	018	W	93LVK023	02/01/93	N/A	02/09/93
BO82B1	021	W	93LVK023	01/30/93	N/A	02/09/93
BO82M3	024	W	93LVK023	01/31/93	N/A	02/09/93
BO82M3	024 MS	W	93LVK024	01/31/93	N/A	02/10/93
BO82M3	024 MSD	W	93LVK024	01/31/93	N/A	02/10/93
BO82Y7	027	W	93LVK024	01/31/93	N/A	02/10/93
BO82B5	030	W	93LVK024	01/30/93	N/A	02/10/93
BO8293	033	W	93LVK024	01/30/93	N/A	02/10/93
BO82C7	036	W	93LVK024	01/30/93	N/A	02/10/93
BO82B9	039	W	93LVK024	01/30/93	N/A	02/10/93
BO82J5	042	W	93LVK024	01/30/93	N/A	02/10/93

LAB QC:

VBLK	MB1	W	93LVK023	N/A	N/A	02/09/93
VBLK	MB1	W	93LVK024	N/A	N/A	02/10/93
VBLK	MB1 BS	W	93LVK024	N/A	N/A	02/10/93

All samples were analyzed within holding time. No qualifications are required.

4/30/93

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Roy F. Weston, Inc. Contract: 6168-02-01

Case No.: WESTINGHOUSE HANFORD RFW Lot: 9302L495

Instrument ID: HP-MSD K Calibration Date(s): 02/09/93 02/09/93

Heated Purge: (Y/N) N Calibration Time(s): 1053 1346

GC Column: DB624 ID: .53(mm)

LAB FILE ID: RRF10 = AK2902 RRF20 = AK2907
RRF50 = AK2903 RRF100= AK2906 RRF200= AK2904

COMPOUND	RRF10	RRF20	RRF50	RRF100	RRF200	RRF	% RSD	MIN RRF
Chloromethane	0.668	0.605	0.676	0.626	0.604	0.636	5.4	
Bromomethane *	1.544	1.385	1.478	1.350	1.322	1.416	6.6*	0.100
Vinyl Chloride *	0.860	0.785	0.829	0.775	0.754	0.801	5.4*	0.100
Chloroethane	0.458	0.391	0.409	0.367	0.346	0.394	10.9	
Methylene Chloride	1.135	1.003	0.930	0.953	0.909	0.986	9.2	
Acetone	0.135	0.090	0.084	0.078	0.072	0.092	27.5	
Carbon Disulfide	2.670	2.495	2.727	2.657	2.678	2.645	3.3	
1,1-Dichloroethene *	1.169	1.093	1.128	1.092	1.051	1.107	4.0*	0.100
1,1-Dichloroethane *	1.978	1.988	1.910	1.930	1.892	1.939	2.2*	0.200
1,2-Dichloroethene (total)	1.230	1.166	1.171	1.181	1.142	1.178	2.8	
Chloroform *	3.218	3.314	3.111	3.222	3.049	3.183	3.3*	0.200
1,2-Dichloroethane *	0.413	0.450	0.406	0.418	0.397	0.417	4.9*	0.100
2-Butanone	0.018	0.020	0.025	0.026	0.025	0.023	14.4	
1,1,1-Trichloroethane *	3.526	3.654	3.462	3.595	3.459	3.539	2.4*	0.100
Carbon Tetrachloride *	3.966	4.069	3.979	4.148	4.022	4.037	1.8*	0.100
Bromodichloromethane *	0.761	0.799	0.752	0.764	0.759	0.767	2.4*	0.200
1,2-Dichloropropane	0.269	0.267	0.245	0.243	0.238	0.252	5.7	
cis-1,3-Dichloropropene *	0.518	0.516	0.502	0.504	0.500	0.508	1.6*	0.200
Trichloroethene *	0.510	0.513	0.491	0.486	0.480	0.496	3.0*	0.300
Dibromochloromethane *	1.082	1.149	1.053	1.067	1.025	1.075	4.3*	0.100
1,1,2-Trichloroethane *	0.350	0.360	0.331	0.317	0.292	0.330	8.1*	0.100
Benzene *	0.592	0.550	0.533	0.527	0.517	0.544	5.4*	0.500
trans-1,3-Dichloropropene *	0.433	0.447	0.435	0.425	0.441	0.436	1.9*	0.100
Bromoform *	0.812	0.912	0.846	0.844	0.808	0.845	4.9*	0.100
4-Methyl-2-pentanone	0.133	0.169	0.149	0.142	0.125	0.144	11.7	
2-Hexanone	0.082	0.094	0.088	0.086	0.080	0.086	6.6	
Tetrachloroethene *	0.744	0.714	0.710	0.684	0.685	0.707	3.5*	0.200
1,1,2,2-Tetrachloroethane *	0.450	0.485	0.433	0.386	0.390	0.429	9.8*	0.500
Toluene *	0.571	0.581	0.558	0.550	0.545	0.561	2.7*	0.400
Chlorobenzene *	1.000	0.983	0.941	0.927	0.914	0.953	3.9*	0.500
Ethylbenzene *	0.391	0.394	0.380	0.376	0.371	0.382	2.5*	0.100
Styrene *	0.741	0.781	0.754	0.743	0.747	0.753	2.2*	0.300
Xylene (total) *	0.456	0.467	0.440	0.438	0.431	0.446	3.3*	0.300
Toluene-d8	0.901	0.988	0.991	0.993	0.963	0.967	4.0	
Bromofluorobenzene *	0.842	0.925	0.909	0.919	0.873	0.894	4.0*	0.200
1,2-Dichloroethane-d4	0.340	0.401	0.366	0.373	0.344	0.365	6.8	

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

4/30/93

PSS 3/24

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Roy F. Weston, Inc. Contract: 6168-02-01

Case No.: WESTINGHOUSE HANFORD RFW Lot: 9302L495

Instrument ID: HP-MSD K mt 3/9/93 Calibration Date: 02/09/93 Time: 1128

Lab File ID: AK2903 Init. Calib. Date(s): 02/09/93 02/09/93

Heated Purge: (Y/N) N Init. Calib. Times: 1053 1346

GC Column: DB624 ID: .53(mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Chloromethane	0.636	0.676		-6.2	
Bromomethane	1.416	1.478	0.100	-4.4	25.0
Vinyl Chloride	0.801	0.829	0.100	-3.5	25.0
Chloroethane	0.394	0.409		-3.9	
Methylene Chloride	0.986	0.930		5.7	
Acetone	0.092	0.084		9.0	
Carbon Disulfide	2.645	2.727		-3.1	
1,1-Dichloroethene	1.107	1.128	0.100	-1.9	25.0
1,1-Dichloroethane	1.939	1.910	0.200	1.5	25.0
1,2-Dichloroethene (total)	1.178	1.171		0.6	
Chloroform	3.183	3.111	0.200	2.3	25.0
1,2-Dichloroethane	0.417	0.406	0.100	2.7	25.0
2-Butanone	0.023	0.025		-9.6	
1,1,1-Trichloroethane	3.539	3.462	0.100	2.2	25.0
Carbon Tetrachloride	4.037	3.979	0.100	1.4	25.0
Bromodichloromethane	0.767	0.752	0.200	1.9	25.0
1,2-Dichloropropane	0.252	0.245		2.8	
cis-1,3-Dichloropropene	0.508	0.502	0.200	1.2	25.0
Trichloroethene	0.496	0.491	0.300	1.0	25.0
Dibromochloromethane	1.075	1.053	0.100	2.0	25.0
1,1,2-Trichloroethane	0.330	0.331	0.100	-0.4	25.0
Benzene	0.544	0.533	0.500	2.0	25.0
trans-1,3-Dichloropropene	0.436	0.435	0.100	0.2	25.0
Bromoform	0.845	0.846	0.100	-0.2	25.0
4-Methyl-2-pentanone	0.144	0.149		-3.3	
2-Hexanone	0.086	0.088		-1.9	
Tetrachloroethene	0.707	0.710	0.200	-0.4	25.0
1,1,2,2-Tetrachloroethane	0.429	0.433	0.500	-0.9	25.0
Toluene	0.561	0.558	0.400	0.4	25.0
Chlorobenzene	0.953	0.941	0.500	1.2	25.0
Ethylbenzene	0.382	0.380	0.100	0.6	25.0
Styrene	0.753	0.754	0.300	-0.1	25.0
Xylene (total)	0.446	0.440	0.300	1.3	25.0
Toluene-d8	0.967	0.991		-2.4	
Bromofluorobenzene	0.894	0.909	0.200	-1.7	25.0
1,2-Dichloroethane-d4	0.365	0.366		-0.2	

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA 3/90 Rev.

4/30/93

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Roy F. Weston, Inc. Contract: 6168-02-01

Case No.: WESTINGHOUSE HANFORD RFW Lot: 9302L495

Instrument ID: HP-MSD K Calibration Date: 02/10/93 Time: 1008

Lab File ID: AK2A02 3/9/93 Init. Calib. Date(s): 02/09/93 02/09/93

Heated Purge: (Y/N) N Init. Calib. Times: 1053 1346

GC Column: DB624 ID: .53(mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Chloromethane	0.636	0.589		7.4	
Bromomethane	1.416	1.436	0.100	-1.4	25.0
Vinyl Chloride	0.801	0.736	0.100	8.1	25.0
Chloroethane	0.394	0.398		-1.0	
Methylene Chloride	0.986	1.013		-2.7	
Acetone	0.092	0.132		-44.0	
Carbon Disulfide	2.645	2.455		7.2	
1,1-Dichloroethene	1.107	1.075	0.100	2.9	25.0
1,1-Dichloroethane	1.939	1.887	0.200	2.7	25.0
1,2-Dichloroethene (total)	1.178	1.140		3.2	
Chloroform	3.183	3.142	0.200	1.3	25.0
1,2-Dichloroethane	0.417	0.405	0.100	2.8	25.0
2-Butanone	0.023	0.028		-23.8	
1,1,1-Trichloroethane	3.539	3.550	0.100	-0.3	25.0
Carbon Tetrachloride	4.037	4.011	0.100	0.6	25.0
Bromodichloromethane	0.767	0.748	0.200	2.4	25.0
1,2-Dichloropropane	0.252	0.239		5.0	
cis-1,3-Dichloropropene	0.508	0.490	0.200	3.6	25.0
Trichloroethene	0.496	0.494	0.300	0.4	25.0
Dibromochloromethane	1.075	0.999	0.100	7.1	25.0
1,1,2-Trichloroethane	0.330	0.306	0.100	7.2	25.0
Benzene	0.544	0.536	0.500	1.5	25.0
trans-1,3-Dichloropropene	0.436	0.409	0.100	6.3	25.0
Bromoform	0.845	0.781	0.100	7.6	25.0
4-Methyl-2-pentanone	0.144	0.139		3.3	
2-Hexanone	0.086	0.112		-30.5	
Tetrachloroethene	0.707	0.727	0.200	-2.8	25.0
1,1,2,2-Tetrachloroethane	0.429	0.383	0.500	10.7	25.0
Toluene	0.561	0.545	0.400	2.9	25.0
Chlorobenzene	0.953	0.920	0.500	3.4	25.0
Ethylbenzene	0.382	0.366	0.100	4.3	25.0
Styrene	0.753	0.715	0.300	5.1	25.0
Xylene (total)	0.446	0.429	0.300	3.8	25.0
Toluene-d8	0.967	0.951		1.6	
Bromofluorobenzene	0.894	0.917	0.200	-2.6	25.0
1,2-Dichloroethane-d4	0.365	0.367		-0.5	

All other compounds must meet a minimum RRF of 0.010.

4/30/93

PSS 3/9/93

9613408.2078

1A

0000203 CLIENT SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 93LVK024-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2A05

Level: (low/med) LOW

Date Received: 02/10/93

% Moisture: not dec.

Date Analyzed: 02/10/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	4	J	x10=40
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	10	U	
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (total)	10	U	

4/30/93

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1A

0000197 CLIENT SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-0

Client: WESTINGHOUSE HANFORD

Matrix: (soil/water) WATER

Lab Sample ID: 93LVK023-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: AK2908

Level: (low/med) LOW

Date Received: 02/09/93

% Moisture: not dec.

Date Analyzed: 02/09/93

GC Column: DB624 ID: .53(mm)

Dilution Factor: 1.00

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

x10=40

4/30/93

9613408.2080

MEMORANDUM

TO: 200-BP-1 Project QA Record May 3, 1993

FR: Susan Winter, Golder Associates Inc

RE: GENERAL CHEMISTRY ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9302L495-WES-1025

INTRODUCTION

This memo presents the results of data validation on data package 9302L495-WES-1025 consisting of fourteen (14) water samples submitted for general chemistry analysis. The samples were analyzed by Weston Analytics using standard methods for all associated parameters. A list of the samples validated is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA
B082F4	02/01/93	WATER
B082C8	02/01/93	WATER
B082W4*	02/01/93	WATER
B082L6	01/31/93	WATER
B082D2*	02/01/93	WATER
B082C0	02/01/93	WATER
B08298	01/30/93	WATER
B082M0	01/31/93	WATER
B082Y4	01/31/93	WATER
B082B2*	01/30/93	WATER
B08290	01/30/93	WATER
B082C4	01/30/93	WATER
B082B6	01/30/93	WATER
B082J2	01/30/93	WATER

Data validation was conducted in accordance with the revised WHC statement of work (WHC 1993) and validation procedures (Bechtold 1992) in which twenty percent (20%) of the samples, marked with an asterisk (*), were randomly assigned for validation . Attachments 1 through 4 to this memo provide the data validation supporting documentation and a summary of the validated results.

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met.

Accuracy. Goals for accuracy were met with the exception of nitrate+nitrite-N as summarized in "Minor Deficiencies".

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. Fourteen (14) samples were included in this data set with a total of 112 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent which meets the work plan objectives of 90%.

MAJOR DEFICIENCIES

No deficiencies were identified for the wet chemistry parameters which required rejection of data.

MINOR DEFICIENCIES

Holding Times

The phosphate analysis was performed out of the required holding time. Therefore, all associated sample results have been qualified as estimated (UJ).

Spike Recovery

The matrix spike percent recovery for nitrate+nitrite-N was 73%, which is less than the validation limit of 75%, but greater than 30%. Therefore, the associated sample results have been qualified as estimated (J).

REFERENCES

WHC, 1993, Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision F, April 1993. Westinghouse Hanford Company, Richland, Washington.

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

9613408.2082

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the analyte was analyzed for and detected. The value reported is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). The data are usable for decision making purposes.

U - Indicates the analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory. The data are usable for decision making purposes.

UJ - Indicates the analyte was analyzed for and not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the sample quantitation limit. The data are usable for decision making purposes.

BJ - Indicates the analyte was analyzed for and detected at a concentration greater than the IDL but less than the CRQL. The associated value is estimated due to a deficiency identified during data validation. The data are usable for decision making purposes.

J - Indicates the analyte was analyzed for and detected at a concentration greater than the CRQL. The associated value is estimated due to a deficiency identified during data validation. The data are usable for decision making purposes.

UR - Indicates the analyte was analyzed for and not detected; however, due to an identified quality control deficiency the data are unusable.

R - Indicates the analyte was analyzed and detected; however, due to an identified quality control deficiency the data are unusable.

9613408.2084

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY - FORM B-7

93021495-WES-1025

SDG:	REVIEWER:	DATE: 4/30/93	PAGE 1 OF 1
COMMENTS: Wet Chemistry			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Nitrate/Nitrite	J	All	MS & R <75%
Phosphate	UJ	All	Analyzed out of holding time

9613408.2086

ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

9613408.2087

0000003

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	Q	REPORTING LIMIT
-001	B082F4	Alkalinity	110		MG/L		2.0
		Chloride by IC	6.7		MG/L		0.25
	299-E33-26	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	20.0	u	UG/L		20.0
		Phosphate by IC	0.25	~~u~~	MG/L	UJ	0.25
		Sulfate by IC	33.3		MG/L		2.5
		Nitrate Nitrite	8.5	—	MG-N/L	J	1.0
		Total Dissolved Solids	284		MG/L		5.0
-004	B082C8	Alkalinity	100		MG/L		2.0
		Chloride by IC	5.9		MG/L		0.25
	299-E33-14	Fluoride by IC	0.51		MG/L		0.50
		Cyanide, Total	16.3		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L	UJ	0.25
		Sulfate by IC	36.9		MG/L		2.5
		Nitrate Nitrite	0.36	—	MG-N/L	J	0.10
		Total Dissolved Solids	137		MG/L		5.0
-007	B082W4	Alkalinity	105		MG/L		2.0
		Chloride by IC	9.0		MG/L		0.25
	699-60-60	Fluoride by IC	0.79		MG/L		0.50
		Cyanide, Total	14.7		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L	UJ	0.25
		Sulfate by IC	39.8		MG/L		2.5
		Nitrate Nitrite	0.60	—	MG-N/L	J	0.10
		Total Dissolved Solids	5.0	u	MG/L		5.0
-010	B082L6	Alkalinity	100		MG/L		2.0
		Chloride by IC	13.5		MG/L		5.0
	299-E34-2	Fluoride by IC	0.54		MG/L		0.50
		Cyanide, Total	24.7		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L	UJ	0.25
		Sulfate by IC	97.3		MG/L		5.0
		Nitrate Nitrite	2.5	—	MG-N/L	J	0.25
		Total Dissolved Solids	283		MG/L		5.0

4/30/93

verified
validated B082W4

9613408.2088

000007

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	Q	REPORTING LIMIT
-013	B082D2	Alkalinity	110		MG/L		2.0
		Chloride by IC	5.8		MG/L		0.25
	299-E33-15	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	34.1		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	28.3		MG/L		2.5
		Nitrate Nitrite	13.4	—	MG-N/L		1.0
		Total Dissolved Solids	267		MG/L		5.0
-016	B082C0	Alkalinity	100		MG/L		2.0
		Chloride by IC	9.0		MG/L		0.25
	299-E33-12	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	41.5		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	17.4		MG/L		2.5
		Nitrate Nitrite	11.6	—	MG-N/L		1.0
		Total Dissolved Solids	234		MG/L		5.0
-019	B08298	Alkalinity	100		MG/L		2.0
		Chloride by IC	5.8		MG/L		0.25
	299-E33-4	Fluoride by IC	0.96		MG/L		0.50
		Cyanide, Total	33.7		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	35.7		MG/L		2.5
		Nitrate Nitrite	16.0	—	MG-N/L		2.0
		Total Dissolved Solids	309		MG/L		5.0
-022	B082M0	Alkalinity	110		MG/L		2.0
		Chloride by IC	22.9		MG/L		5.0
	299-E34-5	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	10.0	u	UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	108		MG/L		5.0
		Nitrate Nitrite	3.7	—	MG-N/L		1.0
		Total Dissolved Solids	351		MG/L		5.0

4/30/93

Verified
Validated 808202

9613408.2089

0000003

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	Q	REPORTING LIMIT
-025	BO82Y4	Alkalinity	100		MG/L		2.0
		Chloride by IC	13.7		MG/L		5.0
	Duplicate	Fluoride by IC	0.57		MG/L		0.50
	2-E34-2	Cyanide, Total	10.0	u	UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	96.0		MG/L		5.0
		Nitrate Nitrite	2.9	—	MG-N/L		1.0
		Total Dissolved Solids	287		MG/L		5.0
-028	BO82B2	Alkalinity	105		MG/L		2.0
		Chloride by IC	7.4		MG/L		0.25
	299-E33-5	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	21.8		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	33.7		MG/L		2.5
		Nitrate Nitrite	9.3	—	MG-N/L		1.0
		Total Dissolved Solids	236		MG/L		5.0
-031	BO8290	Alkalinity	110		MG/L		2.0
		Chloride by IC	6.3		MG/L		0.25
	299-E33-1	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	10.2		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	30.8		MG/L		2.5
		Nitrate Nitrite	15.7	—	MG-N/L		1.0
		Total Dissolved Solids	227		MG/L		5.0
-034	BO82C4	Alkalinity	110		MG/L		2.0
		Chloride by IC	6.7		MG/L		0.25
	299-E33-13	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	14.0		UG/L		10.0
		Phosphate by IC	0.25	~~u~~	MG/L		0.25
		Sulfate by IC	33.0		MG/L		2.5
	4/29/93	Nitrate Nitrite	12.7 ~~12.6~~	—	MG-N/L		1.0
		Total Dissolved Solids	261		MG/L		5.0

4/30/93

Verified
Validated BO8282

9613408.2090

0000005

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 03/01/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	Q	REPORTING LIMIT
-037	B082B6	Alkalinity	100		MG/L		2.0
		Chloride by IC	5.6		MG/L		0.25
	299-E33-7	Fluoride by IC	0.97		MG/L		0.50
		Cyanide, Total	28.6		UG/L		10.0
		Phosphate by IC	0.25	u	MG/L	UJ	0.25
		Sulfate by IC	36.1		MG/L		2.5
		Nitrate Nitrite	14.9	—	MG-N/L	J	2.5
		Total Dissolved Solids	294		MG/L		5.0
-040	B082J2	Alkalinity	100		MG/L		2.0
		Chloride by IC	6.9		MG/L		0.25
	299-E33-34	Fluoride by IC	0.50	u	MG/L		0.50
		Cyanide, Total	15.0		UG/L		10.0
		Phosphate by IC	0.25	u	MG/L	UJ	0.25
		Sulfate by IC	34.5		MG/L		2.5
		Nitrate Nitrite	11.0	—	MG-N/L	J	2.5
		Total Dissolved Solids	274		MG/L		5.0

4/30/93

Verified

9613408.2091

ATTACHMENT 4

DATA VALIDATION SUPPORTING DOCUMENTATION

9613408.2092

WET CHEMISTRY DATA VALIDATION CHECKLIST - FORM A-7

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 4/30/93
LABORATORY: Weston	CASE:	SDG: 9302L495 -WES-1035
SAMPLES/MATRIX: Waters		
B082F4 B082D2 B08244 B08286		
C8 C0 B2 J2		
W4 98 90		
L6 M0 C4		

1. DATA PACKAGE COMPLETENESS

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

Data Package Item	Present?:	Yes	No	N/A
Case Narrative		✓	—	—
Cover Page		✓	—	—
Traffic Reports/Chain-of-Custody		✓	—	—
Sample Analysis Data Report Forms		✓	—	—
Standards Data		✓	—	—
QC Summary				
Blanks Summary Report Forms		✓	—	—
Spike Sample Recovery Report Forms		✓	—	—
Duplicate Sample Analysis Report Forms		✓	—	—
Laboratory Control Sample Report Forms		✓	—	—
Raw Data				
Ion Chromatograph Chromatograms		✓	—	—
TOC and TOX Instrument Printouts		—	—	✓
Laboratory Bench Sheets		✓	—	—
Additional Data				
Laboratory Sample Preparation Logs		✓	—	—
Instrument Run Logs		✓	—	—
Internal Laboratory Chain-of-Custory		—	—	✓
Percent Solids Analysis Records		—	—	✓
Reduction Formulae		—	—	✓
Chemist Notebook Pages		—	—	✓

2. HOLDING TIMES

Were all samples analyzed within holding times?	Yes	No	N/A

Action: If any holding times were 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 balance check conducted prior to the TDS analysis? Yes No N/A

Was the titrant normality checked? Yes No N/A

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Have ICV and CCV been analyzed at the proper frequency? Yes No N/A

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 the validation requirements.

5. LABORATORY BLANKS

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) and list the affected samples and analytes below.

6. 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).

7. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the acceptance limits? Yes No N/A

ACTION: If the sample concentration exceeds the spike concentration by a factor of 4 or more, and spike recoveries are outside the acceptance limits, no qualification is necessary. If spike recovery is outside the control limits and the sample results are >CRQL, qualify the data as estimated (J). If the spike recovery is <30% and the sample results are less then the IDL qualify the data as unusable (R).

8. 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 affected results 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 %R 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.

9. 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 samples in the validation narrative.

10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? Yes No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? See comments Yes No N/A

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

12. FIELD SPLIT SAMPLES

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

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

13. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly? Yes No N/A

Are instrument detection limits below the CRDL? 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).

14. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? Yes No N/A

Were project specific data quality objectives met for this analysis? Yes No N/A

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

COMMENTS (attach additional sheets as necessary):

Sample B08244 was identified as a field duplicate of site 2-E34-2. However - since the corresponding dup. data is not available currently - the RPD could not be calculated.

4/30/93

HOLDING TIME SUMMARY - FORM B-1

93021495-WES-1025

SDG:	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 1 OF 3
COMMENTS: Wet Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B08298	Alkalinity	01/30/93	NA	2/09/93	NA	10	None
B08282	Chloride	↓	↓	2/05/93	↓	6	↓
B08290	Fluoride	↓	↓	2/05/93	↓	6	↓
B08284	CN	↓	↓	2/12/93	↓	13	↓
B08286	Phosphate	↓	↓	2/05/93	↓	6	UJ
B08292	Sulfate	↓	↓	2/05/93	↓	6	None
	NO2/NO3	↓	↓	2/16/93	↓	17	↓
	TDS	↓	↓	2/08/93	↓	9	↓

9613408.2097

HOLDING TIME SUMMARY - FORM B-1

9302L495-WES-1025

SDG:	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 2 OF 3
COMMENTS: Wet Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B082L6	Alkalinity	01/31/93	NA	02/09/93	NA	9	None
B082M0	Chloride	↓	↓	02/05/93	↓	5	↓
B08244	Fluoride	↓	↓	02/05/93	↓	5	↓
	CN	↓	↓	02/12/93	↓	12	↓
	Phosphate	↓	↓	02/05/93	↓	5	US
	Sulfate	↓	↓	02/05/93	↓	5	None
	NO2/NO3	↓	↓	02/04/93	↓	4	↓
	TDS	↓	↓	02/08/93	↓	8	↓
B082M0	NO2/NO3	01/31/93	NA	2/16/93	NA	16	None
B08244	NO2/NO3	01/31/93	NA	2/16/93	NA	16	↓

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HOLDING TIME SUMMARY - FORM B-1

9302L495-WES-1025

SDG:	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 3 OF 3
COMMENTS: Wet Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B082F4	Alkalinity	02/01/93	NA	2/09/93	NA	8	None
C8	Chloride			2/05/93		4	
W4	Fluoride			2/05/93		4	
B082D2	CN			2/12/93		11	
B082C0	Phosphate			2/05/93		4	UJ
	Sulfate			2/05/93		4	None
	NO2/NO3			2/04/93		3	
	TDS			2/08/93		7	
B082D2	NO2/NO3	2/01/93	NA	2/16/93	NA	15	None
B082C0	NO2/NO3	2/01/93	NA	2/16/93	NA	15	

9613408.2100

ROY F. WESTON INC.

INORGANIC ACCURACY REPORT 02/18/93

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9302L495

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-001	B082F4	Chloride by IC	56.5	6.7	50.0	99.6
		Chloride by IC MSD	56.9	6.7	50.0	100
		Fluoride by IC	10.6	0.50u	10.0	106
		Fluoride by IC MSD	10.3	0.50u	10.0	103
		Cyanide, Total	109	20.0 u	100	109
		Cyanide, Total MSD	106	20.0 u	100	106
		Phosphate by IC	5.6	0.25u	5.0	111
		Phosphate by IC MSD	5.3	0.25u	5.0	107
		Sulfate by IC	84.2	33.3	50.0	102
		Sulfate by IC MSD	84.3	33.3	50.0	102
-010	B082L6	Nitrate Nitrite	4.3	2.5	2.5	73.2
		Nitrate Nitrite MSD	4.3	2.5	2.5	74.9
-019	B08298	Nitrate Nitrite	32.9	16.0	20.0	84.6
		Nitrate Nitrite MSD	32.7	16.0	20.0	83.6
BLANK10	93LAL006-MB1	Alkalinity	96.0	0.50u	100	96.0
		Alkalinity MSD	98.0	0.50u	100	98.0
BLANK20	93LAL006-MB2	Alkalinity	98.0	0.50u	100	98.0
BLANK10	93LIC012-MB1	Chloride by IC	4.9	0.25u	5.0	98.1
		Chloride by IC MSD	4.9	0.25u	5.0	99.0
		Fluoride by IC	10	0.50u	10.0	99.8
		Fluoride by IC MSD	10.1	0.50u	10.0	101
		Phosphate by IC	5.0	0.25u	5.0	99.4
		Phosphate by IC MSD	5.1	0.25u	5.0	102
		Sulfate by IC	5.0	0.25u	5.0	100
		Sulfate by IC MSD	5.1	0.25u	5.0	102
BLANK10	93LNT022-MB1	Nitrate Nitrite	1.0	0.10u	1.0	101
		Nitrate Nitrite MSD	1.0	0.10u	1.0	102
BLANK20	93LNT022-MB2	Nitrate Nitrite	0.98	0.10u	1.0	98.5
BLANK10	93LNT028-MB1	Nitrate Nitrite	1.0	0.10u	1.0	102
		Nitrate Nitrite MSD	1.0	0.10u	1.0	102
BLANK20	93LNT028-MB2	Nitrate Nitrite	1.0	0.10u	1.0	103

4/30/93

9613408.2101

MEMORANDUM

TO: 200-BP-1 Project QA Record May 4, 1993

FR: Susan Winter, Golder Associates Inc.

RE: METALS ANALYSIS DATA VALIDATION SUMMARY FOR DATA PACKAGE 9302L495-WES-1025

INTRODUCTION

This memo presents the results of data validation on data package 9302L495-WES-1025 consisting of twenty-eight (28) water samples submitted for total and dissolved metals analysis. The samples were analyzed by Weston Analytics using the CLP protocol for TAL metals/cyanide analytes. A list of the samples validated is provided in the following table.

SAMPLE ID	SAMPLE DATE	MEDIA
B082F4	02/01/93	WATER
B082F6*	02/01/93	WATER
B082C8	02/01/93	WATER
B082D0	02/01/93	WATER
B082W4*	02/01/93	WATER
B082W6	02/01/93	WATER
B082L6	01/31/93	WATER
B082L8	01/31/93	WATER
B082D2*	02/01/93	WATER
B082D4	02/01/93	WATER
B082C0	02/01/93	WATER
B082C2	02/01/93	WATER
B08298	01/30/93	WATER
B082B0	01/30/93	WATER
B082M0	01/31/93	WATER
B082M2	01/31/93	WATER
B082Y4	01/31/93	WATER
B082Y6*	01/31/93	WATER
B082B2*	01/30/93	WATER
B082B4	01/30/93	WATER
B08290	01/30/93	WATER
B08292	01/30/93	WATER
B082C4	01/30/93	WATER
B082C6*	01/30/93	WATER
B082B6	01/30/93	WATER
B082B8	01/30/93	WATER
B082J2	01/30/93	WATER
B082J4*	01/30/93	WATER

Data validation was conducted in accordance with the revised WHC statement of work (WHC 1993) and validation procedures (Bechtold 1992) in which twenty percent (20%) of the samples, marked with an asterisk (*), were randomly assigned for validation. Attachments 1 through 4 to this memo provide the data validation supporting documentation and a summary of the validated results.

DATA QUALITY OBJECTIVES

Precision. Goals for precision were met with the exception of the ICP serial dilution as summarized under "Minor Deficiencies".

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

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. Twenty-eight (28) samples were validated in this data set with a total of 686 determinations reported, all of which were deemed valid. This results in a completeness of 100 percent which meets the work plan objectives of 90%.

MAJOR DEFICIENCIES

No deficiencies were identified for the metals fraction which required rejection of data.

MINOR DEFICIENCIES

Blanks

Vanadium, manganese, and silver were detected in the laboratory blank samples, therefore, the associated sample results which are less than five times the respective blank concentration have been qualified as undetected (U).

Matrix Spike

The matrix spike percent recovery for total lead was less than the 75% control limit, but greater than 30%. Therefore, the lead results associated with the samples analyzed for total metals were qualified as estimated (J for detects, UJ for non-detects).

ICP Serial Dilution

The ICP serial dilution percent difference for total chromium was greater than then 10% control limit for samples greater than fifty times the IDL. Therefore, all chromium results associated with the samples analyzed for total metals were qualified as estimated (J for detects, BJ for detects greater than the IDL but less than the CRDL, and UJ for non-detects).

GFAA Analytical Spikes

GFAA analytical spikes for the following samples were out of the control limits of 85% to 115%:

- Arsenic, samples B082C8, B082W4, B082L6, B082D2, B082C0, B08298, B082M0, B082Y4, B082B2, B08290, B082C4, B082B6, and B082J2.
- Lead, all samples.
- Selenium, samples B082F4, B082C8, B082L6, B082M0, B082C0, B08290, B082Y4, B082M2, B082F6, B082D0, B082W6, B082L8, B082D4, B082C2, B082Y6, B082B4, B08292, B082C6, B082B8, and B082J4.
- Thallium, samples B082D2, B082B2, B08290, B082C4, B082B6, B082J2, and B082D4.

The associated sample results have been qualified as estimated (J for detects greater than the CRDL, BJ for detects less than the CRDL but greater than the IDL, and UJ for non-detects) with the exception of lead in samples B08290 and B082C6 and selenium in samples B082L6, B082M0, B082Y4, and B082M2 which were analyzed by the method of standard additions (MSA).

REFERENCES

WHC, 1993, Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision F, April 1993. Westinghouse Hanford Company, Richland, Washington.

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

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ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

GLOSSARY OF INORGANIC DATA REPORTING QUALIFIERS

B - Indicates the analyte was analyzed for and detected. The value reported is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL). The data are usable for decision making purposes.

U - Indicates the analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory. The data are usable for decision making purposes.

UJ - Indicates the analyte was analyzed for and not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the sample quantitation limit. The data are usable for decision making purposes.

BJ - Indicates the analyte was analyzed for and detected at a concentration greater than the IDL but less than the CRQL. The associated value is estimated due to a deficiency identified during data validation. The data are usable for decision making purposes.

J - Indicates the analyte was analyzed for and detected at a concentration greater than the CRQL. The associated value is estimated due to a deficiency identified during data validation. The data are usable for decision making purposes.

UR - Indicates the analyte was analyzed for and not detected; however, due to an identified quality control deficiency the data are unusable.

R - Indicates the analyte was analyzed and detected; however, due to an identified quality control deficiency the data are unusable.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

DATA QUALIFICATION SUMMARY - FORM B-7

~~92~~ 9302L495-WES-1025

SDG:	REVIEWER: [illegible]	DATE: 4/29/93	PAGE 1 OF 2
COMMENTS: Metals			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Vanadium	u	All	Present in blanks
Manganese	u	B082F6	Present in blanks
		B082D0	
		B082M2	
		B082B4	
Silver	u	B082J4	Present in blanks
Lead	J/uJ	B082F4/C8	MS %R<75%
		B082W4/L6	
		B082D2/C0	
		B08298/M0	
		B08244/B2	
		B08290/C4	
		B082B6/J2	
Chromium	~~J/uJ~~ J/J	B082F4/C8	ICP Serial Dil'n out of CL
	BJ/J	B082W4/L6	(>10% for SR>50x CDL)
	BJ/uJ	B082D2/C0	
	J/J	B08298/M0	
	J/uJ	B08244/B2	
	uJ/uJ	B08290/C4	
	J/J	B082B6/J2	
	4/28/93		

9613408.2108

DATA QUALIFICATION SUMMARY - FORM B-7

9302L495-WES-1025

SDG:	REVIEWER:	DATE: 4/29/93	PAGE 2 OF 2
COMMENTS: Metals			
COMPOUND	QUALIFIER 4/30/93	SAMPLES AFFECTED	REASON
Arsenic	J/BJ	B082C8/W4	GFAA Analytical spike out of CL
	BJ/J	B082L6/D2	
	BJ/J	B082C0/98	
	BJ/BJ	B082M0/Y4	
	BJ/J	B082B2/90	
	BJ/J	B082C4/B6	
	BJ	B082J2	
	~~None analyzed by MSA~~	~~B082F4~~	
~~Lead~~			
Lead	J/UJ	All except for	GFAA Analytical spike out of CL
	None-analyzed by MSA	B08290/C6	
Selenium	BJ/UJ	B082F4/C8	GFAA Analytical spike out of CL
	None-analyzed by MSA	B082L6/M0	
	UJ/UJ	B082C0/90	
	None-analyzed by MSA	B08244/M2	
	BJ/UJ	B082F6/D0	
	UJ/BJ	B082W6/L8	
	UJ/UJ	B08204/C2	
	BJ/BJ	B08246/B4	
	UJ/UJ	B08292/C6	
	UJ/UJ	B08288/J4	
Thallium	UJ/UJ/UJ/UJ	B08202/B2/90/C4	
	UJ/UJ/UJ	B082B6/J2/D4	

4/30/93

4/30/93

4/30/93

9613408.2109

ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

9613408.2110

0000105

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-26

B082F4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249501

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.70	B		F	
7440-39-3	Barium	33.80	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	34600.00			P	
7440-47-3	Chromium	154.00			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	1530.00			P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	10700.00			P	
7439-96-5	Manganese	36.60			P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	69.30			P	
7440-09-7	Potassium	4690.00	B		P	
7782-49-2	Selenium	2.30	~~B~~	W	F	BJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	20500.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	19.50	~~B~~		P	U
7440-66-6	Zinc	11.00	B		P	
	Cyanide	20.00	U		C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 03/90

4/30/93

9613408.2111

0000106

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-26

B082F6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249502

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.20	B		F	
7440-39-3	Barium	30.50	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	29500.00			P	
7440-47-3	Chromium	9.20	B		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	20.60	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	9060.00			P	
7439-96-5	Manganese	3.70	~~B~~		P	U
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5090.00			P	
7782-49-2	Selenium	2.20	~~B~~	W	F	BJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	18300.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	17.90	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified Validated 4/30/93 03/90

9613408.2112

0000107

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-14

B082C8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249504

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	10.40		W	F	J
7440-39-3	Barium	30.20	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.60	B		P	
7440-70-2	Calcium	26700.00			P	
7440-47-3	Chromium	149.00			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	13.50	B		P	
7439-89-6	Iron	1640.00			P	
7439-92-1	Lead	2.00	U	NW	F	UJ
7439-95-4	Magnesium	7640.00			P	
7439-96-5	Manganese	23.40			P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	68.90			P	
7440-09-7	Potassium	5550.00			P	
7782-49-2	Selenium	2.00	U	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	20300.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	26.60	B		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide	16.30			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 03/90

4/30/93

9613408.2113

0000108

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-14

B082D0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249505

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.10	B		F	
7440-39-3	Barium	34.40	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	27100.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	19.10	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	7710.00			P	
7439-96-5	Manganese	2.80	~~B~~		P	U
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	6600.00			P	
7782-49-2	Selenium	2.00	~~U~~		F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21300.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	22.70	~~B~~		P	U
7440-66-6	Zinc	11.30	B		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2114

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
699-60-60

B082W4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249507

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	6.50	~~B~~	W	F	BJ
7440-39-3	Barium	22.10	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	29100.00			P	
7440-47-3	Chromium	9.00	~~B~~		P	BJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	966.00			P	
7439-92-1	Lead	2.00	~~B~~	NW	F	UJ
7439-95-4	Magnesium	9020.00			P	
7439-96-5	Manganese	8.40	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	7010.00			P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	24600.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	24.00	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide	14.70			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
699-60-60

B082W6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249508

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	5.10	B		F	
7440-39-3	Barium	20.60	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	28000.00			P	
7440-47-3	Chromium	7.00			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	11.10	B		P	
7439-89-6	Iron	13.40	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	ws
7439-95-4	Magnesium	8630.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	6060.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	ws
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	24500.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	21.20	~~B~~		P	u
7440-66-6	Zinc	11.90	B		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E34-2

B082L6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249510

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.10	~~B~~	W	F	BJ
7440-39-3	Barium	28.90	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	45300.00			P	
7440-47-3	Chromium	73.70			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	306.00			P	
7439-92-1	Lead	2.00	~~B~~	NW	F	UJ
7439-95-4	Magnesium	13000.00			P	
7439-96-5	Manganese	4.90	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	23.70	B		P	
7440-09-7	Potassium	7750.00			P	
7782-49-2	Selenium	5.40		S	F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21500.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	25.00	~~B~~		P	U
7440-66-6	Zinc	10.70	B		P	
	Cyanide	24.70			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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4/30/93

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E34-2

B082L8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249511

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	5.10	B		F	
7440-39-3	Barium	32.70	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	43600.00			P	
7440-47-3	Chromium	10.50			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	13.10	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	US
7439-95-4	Magnesium	12500.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	7960.00			P	
7782-49-2	Selenium	2.80	~~B~~	W	F	BS
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21600.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	25.00	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2118

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-15

B082D2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249513

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	10.90	/	W	F	J
7440-39-3	Barium	38.30	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	34400.00			P	
7440-47-3	Chromium	7.30	~~B~~		P	BJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	14.10	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	10700.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5000.00			P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	20800.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	25.10	~~B~~		P	U
7440-66-6	Zinc	8.10	B		P	
	Cyanide	34.10			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN verified Validated 4/30/93 03/90

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-15

B082D4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249514

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.20	B		F	
7440-39-3	Barium	34.80	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	33600.00			P	
7440-47-3	Chromium	7.30	B		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	10.00	U		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	10400.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5370.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21100.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	22.70	~~B~~		P	UJ
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-12

B082C0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249516

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	2.10	~~B~~	W	F	BJ
7440-39-3	Barium	76.00	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	9.20			P	
7440-70-2	Calcium	26200.00			P	
7440-47-3	Chromium	7.00	~~U~~		P	UJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	43.30	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	7770.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.12	B		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	7370.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	22800.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	13.00	~~B~~		P	U
7440-66-6	Zinc	17.10	B		P	
	Cyanide	41.50			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-12

B082C2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249517

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	2.00	U		F	
7440-39-3	Barium	84.20	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	26400.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	30.80	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	W
7439-95-4	Magnesium	7780.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	8390.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	W
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	23900.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	12.70	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2122

0000117

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-4

B08298

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249519

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	11.90	/	W	F	J
7440-39-3	Barium	23.10	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	10.40			P	
7440-70-2	Calcium	34700.00			P	
7440-47-3	Chromium	18.20	/		P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	334.00			P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	9770.00			P	
7439-96-5	Manganese	7.10	B		P	
7439-97-6	Mercury	.36			CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5850.00			P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	24400.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	25.50	~~B~~		P	U
7440-66-6	Zinc	19.70	B		P	
	Cyanide	33.70			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2123

0000118

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-4

B082B0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249520

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	8.50	B		F	
7440-39-3	Barium	16.70	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	29300.00			P	
7440-47-3	Chromium	12.30			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	21.20	B		P	
7439-92-1	Lead	2.00	~~B~~	NW	F	W
7439-95-4	Magnesium	8240.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.33			CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5620.00			P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21400.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	19.40	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2124

000119

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E34-5

B082M0

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249522

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.30	~~B~~	W	F	BJ
7440-39-3	Barium	25.70	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	48100.00			P	
7440-47-3	Chromium	17.10			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	82.10	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	14400.00			P	
7439-96-5	Manganese	7.00	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	52.20			P	
7440-09-7	Potassium	7800.00			P	
7782-49-2	Selenium	4.70	B	S	F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	28000.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	22.80	~~B~~		P	U
7440-66-6	Zinc	13.90	B		P	
	Cyanide	10.00	U		C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2125

0000120

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E34-5

B082M2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249523

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	4.70	B		F	
7440-39-3	Barium	23.80	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	41900.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	17.90	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	U
7439-95-4	Magnesium	12500.00			P	
7439-96-5	Manganese	4.70	~~B~~		P	U
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	41.10			P	
7440-09-7	Potassium	7050.00			P	
7782-49-2	Selenium	15.60		S+	F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	25200.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	18.40	~~B~~		P	U
7440-66-6	Zinc	14.50	B		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
Selenium - MSA r = 0.9919 - best of two runs.

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9613408.2126

0000121

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
2-E34-2

B082Y4
Duplicate

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249525

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.80	~~B~~	W	F	BJ
7440-39-3	Barium	25.00	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	36500.00			P	
7440-47-3	Chromium	53.00			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	237.00			P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	10500.00			P	
7439-96-5	Manganese	4.90	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5000.00			P	
7782-49-2	Selenium	4.80	B	S	F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	17300.00			P	
7440-28-0	Thallium	2.20	B		F	
7440-62-2	Vanadium	23.20	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide	10.00	U		C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 03/90

4/30/93

9613408.2127

0000122

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
2-E34-2
B082Y6
Duplicate

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249526

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	5.50	B		F	
7440-39-3	Barium	33.40	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	45400.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	10.00	B		P	
7439-89-6	Iron	11.70	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	WS
7439-95-4	Magnesium	12900.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	8930.00			P	
7782-49-2	Selenium	3.00	~~B~~	W	F	BS
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	22200.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	27.90	~~B~~		P	U
7440-66-6	Zinc	8.00			P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified Validated 4/30/93 03/90

9613408.2128

0000123

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-5

B082B2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249528

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	8.00	~~B~~	W	F	BJ
7440-39-3	Barium	26.00	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	32400.00			P	
7440-47-3	Chromium	7.00	~~U~~		P	UJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	244.00			P	
7439-92-1	Lead	3.80		NW	F	J
7439-95-4	Magnesium	10000.00			P	
7439-96-5	Manganese	7.50	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	4840.00	B		P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	16300.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	21.90	~~B~~		P	U
7440-66-6	Zinc	10.10	B		P	
	Cyanide	21.80			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified Validated 4/30/93 03/90

9613408.2129

000912

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-5

B082B4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249529

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	6.30	B		F	
7440-39-3	Barium	28.80	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	29500.00			P	
7440-47-3	Chromium	11.90			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	20.60	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	9130.00			P	
7439-96-5	Manganese	2.80	~~B~~		P	U
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5140.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	15400.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	19.80	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified [signature] 4/30/93 03/90

9613408.2130

0000125

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-1

B08290

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249531

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	10.60		W	F	J
7440-39-3	Barium	27.90	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	35900.00			P	
7440-47-3	Chromium	7.00	U		P	UJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	45.00	B		P	
7439-92-1	Lead	43.20		NS	F	J
7439-95-4	Magnesium	11900.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	4290.00	B		P	
7782-49-2	Selenium	2.00	U	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21800.00			P	
7440-28-0	Thallium	2.00	U	W	F	UJ
7440-62-2	Vanadium	24.60	B		P	U
7440-66-6	Zinc	9.00	B		P	
	Cyanide	10.20			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified 4/30/93 03/90

9613408.2131

0000126

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-1

B08292

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249532

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	8.10	B		F	
7440-39-3	Barium	23.40	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	5.30			P	
7440-70-2	Calcium	27900.00			P	
7440-47-3	Chromium	12.70			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	10.00	U		P	
7439-92-1	Lead	2.00	~~B~~	NW	F	UJ
7439-95-4	Magnesium	9290.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	3370.00	B		P	
7782-49-2	Selenium	2.00	~~B~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	17500.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	16.10	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN Verified [illegible] 4/30/93 03/90

9613408.2132

0000127

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-13

B082C4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249534

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	9.30	~~B~~	W	F	BJ
7440-39-3	Barium	27.30	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	33100.00			P	
7440-47-3	Chromium	7.00	~~U~~		P	UJ
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	89.70	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	11700.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	4700.00	B		P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	17500.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	21.90	~~B~~		P	U
7440-66-6	Zinc	14.40	B		P	
	Cyanide	14.00			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-13

B082C6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249535

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.70	B		F	
7440-39-3	Barium	27.30	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	32500.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	10.00	U		P	
7439-92-1	Lead	2.00	U	NS	F	
7439-95-4	Magnesium	11500.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	4350.00	B		P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	17800.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	17.90	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-7

B082B6

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249537

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	10.60	/	W	F	J
7440-39-3	Barium	17.90	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.40	B		P	
7440-70-2	Calcium	31200.00			P	
7440-47-3	Chromium	32.20	/		P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	555.00			P	
7439-92-1	Lead	3.10	/	N	F	J
7439-95-4	Magnesium	8640.00			P	
7439-96-5	Manganese	10.60	B		P	
7439-97-6	Mercury	.32			CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	4590.00	B		P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	21200.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	22.30	~~B~~		P	UJ
7440-66-6	Zinc	16.80	B		P	
	Cyanide	28.60			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-7

B082B8

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249538

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	9.00	B		F	
7440-39-3	Barium	21.30	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	34700.00			P	
7440-47-3	Chromium	14.10			P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	11.10	B		P	
7439-89-6	Iron	15.20	B		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	9700.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.32			CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5820.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	24200.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	23.60	~~B~~		P	U
7440-66-6	Zinc	8.00	U		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-34

B082J2

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249540

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	9.70	~~B~~	W	F	BJ
7440-39-3	Barium	28.90	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	35100.00			P	
7440-47-3	Chromium	79.00			P	J
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	310.00			P	
7439-92-1	Lead	3.40		NW	F	J
7439-95-4	Magnesium	10600.00			P	
7439-96-5	Manganese	7.10	B		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	30.60	B		P	
7440-09-7	Potassium	4830.00	B		P	
7782-49-2	Selenium	2.00	U		F	
7440-22-4	Silver	7.00	U		P	
7440-23-5	Sodium	20500.00			P	
7440-28-0	Thallium	2.00	~~U~~	W	F	UJ
7440-62-2	Vanadium	27.30	~~B~~		P	U
7440-66-6	Zinc	10.70	B		P	
	Cyanide	15.00			C	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
299-E33-34

BO82J4

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Lab Sample ID: 930249541

Level (low/med): LOW Date Received: 2/03/93

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M	Q
7429-90-5	Aluminum	64.00	U		P	
7440-36-0	Antimony	57.00	U		P	
7440-38-2	Arsenic	7.20	B		F	
7440-39-3	Barium	27.70	B		P	
7440-41-7	Beryllium	1.00	U		P	
7440-43-9	Cadmium	4.00	U		P	
7440-70-2	Calcium	32000.00			P	
7440-47-3	Chromium	7.00	U		P	
7440-48-4	Cobalt	8.00	U		P	
7440-50-8	Copper	9.00	U		P	
7439-89-6	Iron	10.00	U		P	
7439-92-1	Lead	2.00	~~U~~	NW	F	UJ
7439-95-4	Magnesium	9640.00			P	
7439-96-5	Manganese	2.00	U		P	
7439-97-6	Mercury	.10	U		CV	
7440-02-0	Nickel	19.00	U		P	
7440-09-7	Potassium	5670.00			P	
7782-49-2	Selenium	2.00	~~U~~	W	F	UJ
7440-22-4	Silver	7.60	~~B~~		P	U
7440-23-5	Sodium	19000.00			P	
7440-28-0	Thallium	2.00	U		F	
7440-62-2	Vanadium	23.10	~~B~~		P	U
7440-66-6	Zinc	8.20	B		P	
	Cyanide				NR	
7440-69-9	Bismuth	150.00	U		P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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ATTACHMENT 4

DATA VALIDATION SUPPORTING DOCUMENTATION

9613408.2139

WHC-SD-EN-SPP-002, Rev. 1

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST - FORM A-6

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 4/29/93
LABORATORY: Weston	CASE:	SDG: 9302L495-WES-1025
SAMPLES/MATRIX: Water B08286/B8/J2/J4		

B082F4	B082W4	B082D2	B08298	B08244	B08290
F6	W6	D4	B0	46	92
C8	L6	C0	M0	B2	C4
D0	L8	C2	M2	B4	C6

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	✓	—	—

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

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

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

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? See comments 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

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 data quality objectives met for this analysis? Yes No N/A

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

COMMENTS (attach additional sheets as necessary):

Samples B08244 (total metals) and B08246 (dissolved metals) were identified as a field duplicate for site 2-E34-2. However - since the corresponding duplicate sample results are not currently available, - the RPDs could not be calculated.

4/30/93

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BLANKS

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

Lab code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Preparation Blank Matrix (soil/water): WATER

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

Assoc. w/samples analyzed for Total Metals

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
			5X				5X				
Aluminum	64.0	U	64.0	U	64.0	U	64.0	U	64.000	U	P
Antimony	57.0	U	57.0	U	57.0	U	57.0	U	57.000	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Barium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cadmium	-4.5	B	4.0	U	4.0	U	4.0	U	4.000	U	P
Calcium	17.0	U	17.0	U	17.0	U	17.0	U	17.000	U	P
Chromium	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cobalt	8.0	U	8.0	U	8.0	U	8.0	U	8.000	U	P
Copper	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Iron	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Magnesium	44.0	U	44.0	U	44.0	U	44.0	U	44.000	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Mercury	.1	U	.1	U	.1	U	.1	U	.100	U	CV
Nickel	19.0	U	-21.0	B	19.0	U	-21.0	B	19.000	U	P
Potassium	877.0	U	877.0	U	877.0	U	877.0	U	877.000	U	P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Silver	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Sodium	155.0	U	155.0	U	155.0	U	155.0	U	155.000	U	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	F
Vanadium	7.0	U	44.5 8.9	B	7.0	U	36.0 7.2	B	7.000	U	P
Zinc	8.0	U	8.0	U	8.0	U	8.0	U	8.000	U	P
Cyanide	10.0	U	10.0	U	10.0	U			10.000	U	C

FORM III - IN 03/90

Assoc w/
B082C8
B082W4
B082L6
B08202
B082C0
B08298
B082M0

B08244
B082B2
B08290
B082C4
B082B6

B082J2
B082F4

4/30/93

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.: CLP495

Preparation Blank Matrix (soil/water): WATER

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
									5X		
Aluminum			64.0	U					64.000	U	P
Antimony			57.0	U					57.000	U	P
Arsenic			2.0	U	2.0	U	2.0	U	2.000	U	F
Barium			5.0	U					5.000	U	P
Beryllium			1.0	U					1.000	U	P
Cadmium			4.0	U					4.000	U	P
Calcium			17.0	U					207.5 41.500	B	P
Chromium			7.0	U					7.000	U	P
Cobalt			8.0	U					8.000	U	P
Copper			9.0	U					9.000	U	P
Iron			10.0	U					10.000	U	P
Lead			2.0	U	2.0	U			2.000	U	F
Magnesium			44.0	U					44.000	U	P
Manganese			2.0	U					2.000	U	P
Mercury			.1	U					.100	U	CV
Nickel			19.0	U					19.000	U	P
Potassium			877.0	U					877.000	U	P
Selenium			2.0	U	2.0	U	2.0	U	2.000	U	F
Silver			7.0	U					7.000	U	P
Sodium			-260.0	B					156.200	B	P
Thallium			2.0	U	2.0	U			2.000	U	F
Vanadium			7.2	B					35.5 7.100	B	P
Zinc			8.0	U					8.000	U	P
Cyanide											NR

FORM III - IN 03/90

Analyzed with Samples for Diss. Metals

4/30/93

9613408.2147

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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.: CLP495

Preparation Blank Matrix (soil/water): WATER

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

Assoc. w/ samples analyzed for dissolved metals.

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	64.0	U	64.0	U	64.0	U	64.0	U			P
Antimony	57.0	U	57.0	U	57.0	U	57.0	U			P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium	5.0	U	5.0	U	5.0	U	5.0	U			P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U			P
Cadmium	4.0	U	4.0	U	-4.2	B	4.0	U			P
Calcium	17.0	U	17.0	U	17.0	U	17.0	U			P
Chromium	7.0	U	7.0	U	7.0	U	7.0	U			P
Cobalt	8.0	U	8.0	U	8.0	U	8.0	U			P
Copper	9.0	U	9.0	U	9.0	U	9.0	U			P
Iron	10.0	U	10.0	U	10.0	U	10.0	U			P
Lead	2.0	U	2.0	U	2.0	U					F
Magnesium	44.0	U	314 62.8	B	44.0	U	44.0	U			P
Manganese	11.5 2.3	B	2.0	U	2.0	U	2.0	U			P
Mercury											NR
Nickel	19.0	U	19.0	U	19.0	U	19.0	U			P
Potassium	877.0	U	877.0	U	877.0	U	877.0	U			P
Selenium	2.0	U	2.0	U	2.0	U	2.0	U			F
Silver	41.5 8.3	B	7.0	U	7.0	U	7.0	U			P
Sodium	155.0	U	184.7	B	155.0	U	155.0	U			P
Thallium	2.0	U	923.5 2.0	U	2.0	U	2.0	U			F
Vanadium	7.0	U	7.0	U	7.0	U	7.0	U			P
Zinc	8.0	U	8.0	U	8.0	U	8.0	U			P
Cyanide											NR

FORM III - IN 03/90

B082F6
B08200
B082W6
B082L8

B08204
B082C2
B08280
B082M2
B08246
B08284
B08292
B082C6
B082B8

4/30/93

9613408.2148

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U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

B082F4L

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix (soil/water): WATER Level (low/med): LOW

Assoc. w/ samples analyzed for Total Metals

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M	
Aluminum	64.00	U	320.00	U			P	
Antimony	57.00	U	285.00	U			P	
Arsenic								
Barium	33.80	B	37.50	B	10.9		P	
Beryllium	1.00	U	5.00	U			P	
Cadmium	4.00	U	20.00	U			P	
Calcium	34637.80		34520.00		.3		P	
Chromium	153.60		119.00		22.5		P	J/UJ
Cobalt	8.00	U	40.00	U			P	
Copper	9.00	U	45.00	U			P	
Iron	1532.20		1537.50		.3		P	
Lead								
Magnesium	10726.30		10796.00	B	.6		P	
Manganese	36.60		35.50	B	3.0		P	
Mercury								
Nickel	69.30		96.50	B	39.2		P	
Potassium	4690.50	B	4385.00	U	100.0		P	
Selenium								
Silver	7.00	U	35.00	U			P	
Sodium	20479.00		19811.50	B	3.3		P	
Thallium								
Vanadium	19.50	B	35.00	U	100.0		P	
Zinc	11.00	B	44.50	B	304.5		P	

FORM IX - IN

03/90

4/30/93

9613408.2149

0009152

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

B082F4S

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP495

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2009.6000		64.0000	U	2000.00	100.5		P
Antimony	75-125	477.1001		57.0000	U	500.00	95.4		P
Arsenic	75-125	51.6000		7.7000	B	40.00	109.8		F
Barium	75-125	1996.0000		33.8000	B	2000.00	98.1		P
Beryllium	75-125	48.9000		1.0000	U	50.00	97.8		P
Cadmium	75-125	44.4000		4.0000	U	50.00	88.8		P
Calcium									NR
Chromium	75-125	367.6001		153.6000		200.00	107.0		P
Cobalt	75-125	493.3999		8.0000	U	500.00	98.7		P
Copper	75-125	247.5000		9.0000	U	250.00	99.0		P
Iron	75-125	2727.6000		1532.2000		1000.00	119.5		P
Lead	75-125	14.8000		2.0000	U	20.00	74.0	N	F
Magnesium									NR
Manganese	75-125	529.8999		36.6000		500.00	98.7		P
Mercury	75-125	.9710		.1000	U	1.00	97.1		CV
Nickel	75-125	582.1001		69.3000		500.00	102.6		P
Potassium									NR
Selenium	75-125	10.5000		2.3000	B	10.00	82.0		F
Silver	75-125	47.4000		7.0000	U	50.00	94.8		P
Sodium									NR
Thallium	75-125	53.3000		2.0000	U	50.00	106.6		F
Vanadium	75-125	520.0000		19.5000	B	500.00	100.1		P
Zinc	75-125	500.5000		11.0000	B	500.00	97.9		P
Cyanide	75-125	109.4990		20.0000	U	100.00	109.5		C

Comments: Qualify all Lead results assoc. w/ the samples analyzed for TOTAL metals as estimated (J/UJ)

FORM V (Part 1) - IN 03/90

4/29/93

ACCURACY DATA SUMMARY - FORM B-4

SDG: 93002495	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 1 OF 5	
COMMENTS: GFAA Analytical Spikes.				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B082C8	Arsenic (Total)	121%	B082C8	J
W4		123%	W4	BJ
L6		125%	L6	BJ
D2		120%	D2	J
C0		124%	C0	BJ
98		130%	98	J
M0		128%	M0	BJ
Y4		127%	Y4	BJ
B2		132%	B2	BJ
90		117%	90	J
C4		130%	C4	BJ
B6		132%	B6	J
J2		129%	J2	BJ
F4		90%	F4	None - SR is within limits

9613408.2150

ACCURACY DATA SUMMARY - FORM B-4

SDG: 9302L495	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 2 OF 5
COMMENTS: GFAA Analytical Spikes			

SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B082F4	Lead (Total)	64%	B082F4	UJ
C8		62%	C8	UJ
W4		64%	W4	UJ
L6		52%	L6	UJ
D2		72%	D2	UJ
C0		75%	C0	UJ
98		65%	98	UJ
M0		52%	M0	UJ
Y4		51%	Y4	UJ
B2		71%	B2	J
90		80%	90	None-analyzed by MSA
C4		69%	C4	UJ
B6		63%	B6	J
J2		70%	J2	J

9613408.2151

ACCURACY DATA SUMMARY - FORM B-4

SDG: 9302L495	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 3 OF 5	
COMMENTS: GFAA Analytical Spikes				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B082F6	Lead (Dissolved)	72	B082F6	UJ
D0		67	D0	UJ
W6		76	W6	UJ
L8		56	L8	UJ
D4		80	D4	UJ
C2		77	C2	UJ
B0		73	B0	UJ
M2		59	M2	UJ
Y6		56	Y6	UJ
B4		74	B4	UJ
92		81	92	UJ
C6		73	C6	None-analyzed by MSA
B8		73	B8	UJ
J4		75	J4	UJ

9613408.2152

ACCURACY DATA SUMMARY - FORM B-4

SDG: 9302L495	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 4 OF 5
COMMENTS: GFAA Analytical Spikes			

SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B082F4	Selenium (Total)	70%	B082F4	BJ
C8		68%	C8	UJ
W4		92%	W4	None- %R is within limits
L6		58	L6	None- analyted by MSA
D2		92	D2	None- %R is within limits
C0		77	C0	UJ
98		89	98	None- %R is within limits
M0		65	M0	None- analyted by MSA
Y4		63	Y4	None- analyted by MSA
90		75	90	UJ
F6	Selenium (Soluble)	71	F6	BJ
D0		74	D0	UJ
W6		69	W6	UJ
L8		63	L8	BJ
D4		74	D4	UJ
C2		74	C2	UJ
M2		66	M2	None- analyted by MSA

9613408.2153

ACCURACY DATA SUMMARY - FORM B-4

SDG: 9302L495	REVIEWER: [illegible]	DATE: 4/30/93	PAGE 5 OF 5	
COMMENTS: GFAA Analytical Spikes				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B08246	Selenium (soluble)	62	B08246	BJ
B4		72	B4	UJ
92		72	92	UJ
C6		76	C6	UJ
B8		68	B8	UJ
J4	4/30/93	~~UJ~~ 70	J4	UJ
B08202	Thallium (Total)	117	B08202	UJ
~~C0~~			~~C0~~	
B08282	Thallium (Total)	119	B08282	UJ
90		119	90	UJ
C4		118	C4	UJ
B6		120	B6	UJ
J2		116	J2	UJ
~~F6~~ 04		118	04	UJ

B-4 4/30/93

4/30/93

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