

OSM RCRA LEVEL C DATA ASSESSMENT

5 of 10

DATE 10-4-90
REVIEWED BY C.J. Simiele
LABORATORY 222-S WHC
CASE # SST-241-U-110
SDG # Core 6 Composite

SAMPLES/MATRIX Seq 2- 89-043 Seq 3- 89-044
Seq 4- 89-045
Lab ID #: fusion Prep: F0923
Aud Prep: F0935
Water Prep: F0930
untreated: F0917

DATA ASSESSMENT SUMMARY

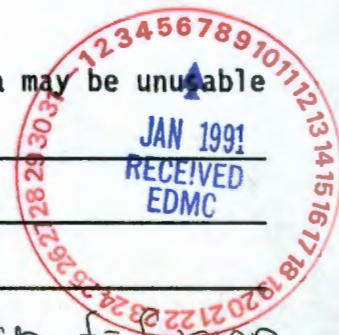
QUALITY CONTROL CHECK	ANALYSIS	CN ^u	Hg ^u	ICP ^f
1. <u>Holding Time</u>		<u>X</u>	<u>X</u>	<u>X</u>
2. <u>Calibration</u>		<u>O</u>	<u>O</u>	<u>M</u>
3. <u>Analytical Blank</u>		<u>X</u>	<u>O</u>	<u>X</u>
4. <u>LCS</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
5. <u>ICS (ICP only)</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u> [*]
6. <u>Matrix Spike</u>		<u>O</u>	<u>O</u>	<u>M</u>
7. <u>Duplicate Analyses</u>		<u>O</u>	<u>X</u>	<u>X</u>
8. _____		_____	_____	_____
9. _____		_____	_____	_____
10. _____		_____	_____	_____

O = data had no problems

X = data qualified due to minor problems

M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: _____



NOTES: a = acid digested, w = water leach, f = fusion,
u = untreated; * = none provided with data package.

o Refer to the corresponding attachments for explanation of any problems.



Westinghouse
Hanford Company

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

SAMPLES/MATRIX Seq(2)-89-043; Seq(3)-89-044

REVIEWED BY C.J. Simiele

Seq(4)-89-045

LABORATORY 222-S

LAB ID: Fusion : F0923

CASE # SST-241-U-110

Acid digest: F0935

SDG # Core 10 Composite

Water prep: F0930
untreated: F0917

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	IC ^w	TOC ^w	NH ₃ ^w
1. <u>Holding time</u>		<u>X</u>	<u>X</u>	<u>X</u>
2. <u>Calibration</u>		<u>O</u>	<u>O</u>	<u>O</u>
3. <u>Analytical Blank</u>		<u>O</u>	<u>O</u>	<u>O</u>
4. <u>LCS</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
5. <u>LCS (IC Only)</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
6. <u>Matrix Spike</u>		<u>O</u>	<u>O</u>	<u>O</u>
7. <u>Duplicate Analyses</u>		<u>X</u>	<u>X</u>	<u>O</u>
8. _____		_____	_____	_____
9. _____		_____	_____	_____
10. _____		_____	_____	_____

O = data had no problems

X = data qualified due to minor problems

M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: _____

NOTES: w=water leach prep; fusion=f; a=acid
digestion; u=untreated

o Refer to the corresponding attachments for explanation of any problems.



Westinghouse
Hanford Company

OSH RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

SAMPLES/MATRIX Seq(2) 89-043; Seq(2) 89-044

REVIEWED BY C.J. Simiele

LAB ID: Seq(4) 89-045
fusion F0923

LABORATORY WHC-222-S

Acid digest F0935

CASE # SST-241-U-110

Water Prep F0930
untreated F0917

SDG # Core 6 Composite

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS <u>Carbonate^w</u>	<u>NO₂^w</u>	<u>A.A.^w</u>
1. <u>Holding Times</u>	<u>X</u>	<u>X</u>	<u>X</u>
2. <u>Calibration</u>	<u>O</u>	<u>O</u>	<u>O</u>
3. <u>Analytical Blank</u>	<u>O</u>	<u>O</u>	<u>O</u>
4. <u>LCS</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
5. <u>ICS (ICP only)</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
6. <u>Matrix Spike</u>	<u>O</u>	<u>O</u>	<u>O</u>
7. <u>Duplicate Analyses</u>	<u>O</u>	<u>X</u>	<u>O</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____

O = data had no problems

X = data qualified due to minor problems

M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: _____

NOTES: w=water leach; A=acid digested; fusion

o Refer to the corresponding attachments for explanation of any problems.

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90 SAMPLES/MATRIX Seq(2) 89-043 Seq(3)-89-044
 REVIEWED BY C.J. Simiele Seq(4) 89-045
 LABORATORY WHC 222-S LAB ID: Fusion FO923
 CASE # SST-241-U-110 Aud. dupst: FO935
 SDG # Core 6 Composite Water leach FO930
untreated: FO917

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	ICP ^W	A.A. ^A	ICP ^A
1. <u>Holding Time</u>		<u>X</u>	<u>O</u>	<u>O</u>
2. <u>Calibration</u>		<u>O</u>	<u>O</u>	<u>M</u>
3. <u>Analytical Blank</u>		<u>O</u>	<u>O</u>	<u>O</u>
4. <u>LCS</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
5. <u>ICS (ICP only)</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
6. <u>Matrix Spike</u>		<u>X</u>	<u>O</u>	<u>X</u>
7. <u>Duplicate Analyses</u>		<u>X</u>	<u>X</u>	<u>X</u>
8. _____		_____	_____	_____
9. _____		_____	_____	_____
10. _____		_____	_____	_____

O = data had no problems
 X = data qualified due to minor problems
 M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: _____

NOTES: _____

o Refer to the corresponding attachments for explanation of any problems.



Westinghouse
Hanford Company

OSH RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

SAMPLES/MATRIX Seq(2)-89-043; Seq(3)-89-044

REVIEWED BY C.J. Simiele

LAB ID Seq(4) 89-045

LABORATORY 227-S WHC

Fusion - F0923

CASE # SST-241-U-110

Acid digest - F0935

SDG # Core 6 Composite

Water leach - F0930
untreated - F0917

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK

ANALYSIS

pH

%Water

(Duplicate Analyses only)

1. —

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2. Duplicate Analyses.

0

0

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3. —

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6. —

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7. —

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8. —

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9. —

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10. —

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0 = data had no problems

X = data qualified due to minor problems

M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT:

NOTES:

o Refer to the corresponding attachments for explanation of any problems.

Analytical Laboratory Data Summary

SINGLE SHELL TANK PROJECT

The next four pages of this report (including this page) summarizes the results for the analysis of the

Core 6 Composite Sample
Tank 241-U-110

UNTREATED SAMPLE RESULTS

	Sample	Duplicate Sample	
Laboratory ID:	F0917	F0918	
pH	12.91	12.97	
Laboratory ID:	F0917	F0918	
% Water	35.40%	38.60%	
Laboratory ID:	F0917	F0918	
Mercury	2.55 J ug/g	4.89	ug/g
Laboratory ID:	F0917	F0918	
Cyanide	<0.12 u ug/g	<0.13	ug/g

10-4-90
CJ Sumfield

**Core 6 Composite
Fusion Dissolution**

Data Summary
Results are wet weight

Radiological Analysis
Fusion Dissolution

ICP Results
Fusion Dissolution

	Sample	Duplicate Sample
Fusion	2.86 g/L	2.38 g/L
Total Alpha	<0.44 uci/g	<0.48 uci/g
Total Beta	811 uci/g	1180 uci/g
GEA Cs-137	20.60 uci/g	25.40 uci/g
Uranium	4580 ug/g	6600 ug/g
Americium 241	0.09 uci/g	0.15 uci/g
Iodine 129	<0.0064 uci/g	<0.0082 uci/g
Neptunium 237	<0.38 uci/g	<0.45 uci/g
Plutonium	0.21 uci/g	0.32 uci/g
Strontium 90	270 uci/g	372 uci/g
Technetium 99	<0.017 uci/g	<0.021 uci/g

	Wet Weight Sample	Wet Weight Duplicate
Aluminum	80713 ug/g XJ	111659 ug/g
Antimony	LT R	LT
Barium	LT R	43 ug/g
Beryllium	LT R	LT
Bismuth	14919 ug/g	12799 ug/g
Boron	291 ug/g XJ	643 ug/g
Cadmium	LT R	LT
Calcium	1206 ug/g XJ	1669 ug/g
Cerium	LT R	LT
Cobalt	LT UJ	LT
Copper	LT R	LT
Europium	LT	LT
Iron	11319 ug/g J	14160 ug/g
Lanthanum	LT UJ	LT
Lead	LT UJ	LT
Lithium	LT UJ	LT
Magnesium	2310 ug/g XJ	1910 ug/g
Manganese	2766 ug/g J	4086 ug/g
Mercury	LT	LT
Molybdenum	LT UJ	LT
Nickel	5634 ug/g J	6348 ug/g
Samarium	LT R	LT
Selenium	LT UJ	LT
Silver	LT R	LT
Sodium	131801 ug/g J	127425 ug/g
Strontium	323 ug/g J	487 ug/g
Sulfur	LT UJ	407 ug/g
Tantalum	LT R	LT
Thallium	LT UJ	LT
Thorium	LT UJ	LT
Tin	LT UJ	LT
Titanium	LT UJ	LT
Uranium	LT UJ	LT
Vanadium	LT UJ	LT
Zinc	98 ug/g XJ	126 ug/g
Zirconium	LT UJ	LT

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

10-4-90
C.J. Sample

Core 6 Composite

Water Digestion

Data Summary

Results are Wet Weight

	Sample	Duplicate
pH of Digested Solution		
pH	10.34	10.98

Anion Analysis

Water Digestion

Fluoride	6.04E+03 ug/g	5.40E+03 ug/g
Chloride	<1.47E+03 ug/g	<1.41E+03 ug/g
Nitrate	3.87E+04 ug/g J	5.26E+04 ug/g
Phosphate	3.18E+04 ug/g J	3.84E+04 ug/g
Sulfate	<1.47E+04 ug/g	<1.41E+04 ug/g

Total Organic Carbon	9.45E+02 ug/g J	6.28E+02 ug/g
Total Organic Carbon *	<5.49E+02 ug/g	5.47E+02 ug/g
Ammonia	<1.67E+04 ug/g	<1.60E+04 ug/g
Carbonate	3.27E+03 ug/g	3.00E+03 ug/g
Chrome VI	Analysis not performed	
Nitrite	8.43E+03 ug/g J	1.17E+04 ug/g

Radiological Analysis

Water Digestion

Total Alpha 02-06-90	<6.57E-03 uci/g	<3.67E-03 uci/g
Total Beta 02-06-90	5.28 uci/g	1.45E+01 uci/g
GEA Cs-137	4.55 uci/g	6.93 uci/g
Americium 241	<2.66E-03 uci/g	<2.48E-03 uci/g
Carbon 14	2.65E-04 uci/g	1.71E-04 uci/g
Iodine 129	<9.00E-03 uci/g	<1.40E-02 uci/g
Neptunium	<1.57E-01 uci/g	<1.51E-01 uci/g
Plutonium 239	<1.51E-03 uci/g	<9.46E-04 uci/g
Strontium	6.77E-02 uci/g	5.94E-02 uci/g
Technetium 99	5.02E-03 uci/g	3.97E-02 uci/g
Tritium	2.73E-03 uci/g	2.34E-03 uci/g

Atomic Absorption Spectroscopy

Hydride Analysis

Water Digestion

Arsenic	<7.27E-1 ug/g	<6.97E-01 ug/g
Mercury	1.32E-01 ug/g	1.00E-01 ug/g
Selenium	2.11E-01 ug/g	2.02E-01 ug/g

ICP Results

Water Digestion

	Sample	Duplicate
Aluminum	3823.95 ug/g	2694.93 ug/g
Antimony	LT	LT
Barium	LT	LT
Beryllium	LT	LT
Boron	289.22 ug/g	389.25 ug/g
Cadmium	LT	LT
Calcium	300.40 ug/g J	83.68 ug/g
Cerium	LT	LT
Chromium	379.24 ug/g	297.81 ug/g
Cobalt	LT	LT
Copper	LT	LT
Europium	LT	LT
Iron	47.01 ug/g	103.28 ug/g
Lanthanum	LT	LT
Lithium	LT	LT
Magnesium	622.75 ug/g J	2121.69 ug/g
Manganese	LT	LT
Mercury	41.42 ug/g	38.21 ug/g
Molybdenum	LT	LT
Neodymium	LT	LT
Nickel	LT	LT
Potassium	LT	LT
Selenium	LT	LT
Silver	LT	LT
Sodium	102854.29 ug/g J	78376.12 ug/g
Strontium	LT	LT
Sulfur	411.28 ug/g	421.39 ug/g
Tantalum	LT	LT
Thallium	LT UJ	684.28 ug/g
Tin	LT	LT
Titanium	LT	LT
Vanadium	LT	LT
Zinc	26.15 ug/g	48.96 ug/g
Zirconium	LT	LT

LT: Less Than

NC: Not Calibrated

NOT CALC: Not Calculated

Instrument Standards Outside Control Limits

Core 6 Composite
Acid Digestion

DATA SUMMARY
Results are wet weight

ICP Results
Acid Digestion

Atomic Absorption Spectroscopy
Hydride Analysis
Acid Digestion

	Sample	Duplicate
Acid Digestion	9.51 g/L	11.6 g/L
Arsenic	0.66 ug/g J	0.19 ug/g
Mercury	1.67 ug/g	1.34 ug/g
Selenium	0.90 ug/g J	<4.31 ug/g

	Wet Weight	Wet Weight
	Sample	Duplicate
Aluminum	107879 ug/g	94696 ug/g
Arsenic	262 ug/g	106 ug/g
Barium	299 ug/g	32 ug/g
Beryllium	7 ug/g	2 ug/g
Bismuth	27539 ug/g	12586 ug/g
Boron	119 ug/g	47 ug/g
Cadmium	34 ug/g	LT
Calcium	748 ug/g	419 ug/g
Cerium	1715 ug/g	LT
Chromium	868 ug/g	377 ug/g
Copper	140 ug/g	47 ug/g
Europium	27 ug/g	LT
Iron	16785 ug/g	9013 ug/g
Lanthanum	147 ug/g	LT
Lead	1252 ug/g	466 ug/g
Lithium	51 ug/g	LT
Magnesium	2630 ug/g	735 ug/g
Manganese	4849 ug/g	2811 ug/g
Mercury	428 ug/g	959 ug/g
Molybdenum	95 ug/g	36 ug/g
Neodymium	896 ug/g	LT
Nickel	222 ug/g	96 ug/g
Phosphorous	35475 ug/g	12888 ug/g
Potassium	1934 ug/g	LT
Samarium	1578 ug/g	LT
Selenium	1428 ug/g	673 ug/g
Silver	126 ug/g	LT
Sodium	146087 ug/g	69937 ug/g
Strontium	639 ug/g	356 ug/g
Sulfur	639 ug/g	290 ug/g
Tantalum	350 ug/g	LT
Thallium	8236 ug/g	850 ug/g
Thorium	4171 ug/g	1486 ug/g
Tin	213 ug/g	93 ug/g
Titanium	132 ug/g	50 ug/g
Uranium	17899 ug/g	6825 ug/g
Vanadium	122 ug/g	45 ug/g
Zinc	215 ug/g	84 ug/g
Zirconium	278 ug/g	63 ug/g

10-4-90
W. Sample

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Holding Time

COMMENTS: Of the untreated samples no analyses
holding times were met. (including:
pH, mercury, cyanide and % water.)

ACTION: None - Due to the unusual circumstances
under which SST-241-U-110 samples were analyzed
any analyses which did not meet specified
holding times will not be qualified.

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: All^{CN} initial and continuing calibration
within control limits

ACTION: None.

sample # constituent value/qual

sample # constituent value/qual



91120601314

RCRA LEVEL C QC

Name C. J Simiele

Date 10-4-90

QC Check: Analytical Blanks.

COMMENTS: Possible Contaminants detected
in cyanide preparation blank. No
D.L. provided for CN analysis.

ACTION: Qualify associated data as
per OSM guidelines

sample # constituent value/qual
F0917 CN U

sample # constituent value/qual

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

91120601316

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Matrix Spike

COMMENTS: CN matrix spike within control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

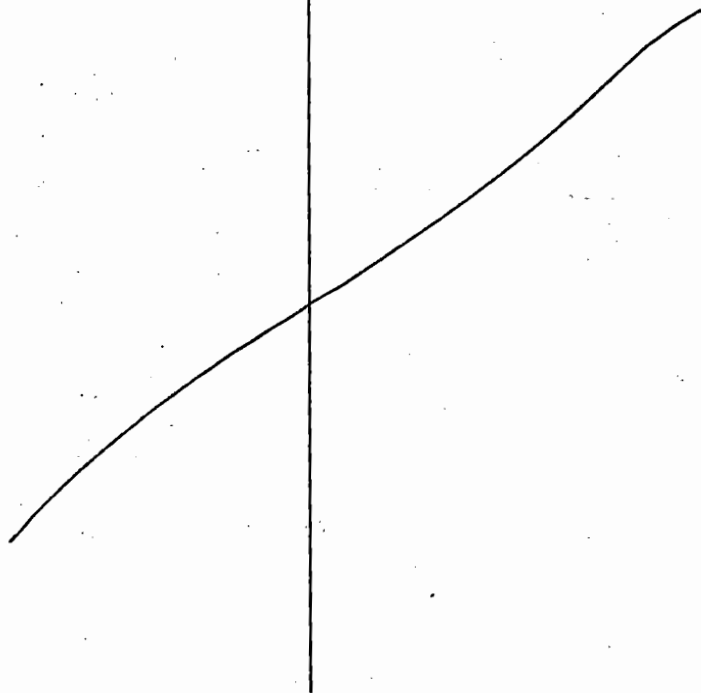
QC Check: Duplicate Analyses

COMMENTS: CN duplicate analyses within
control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



RCRA LEVEL C QC

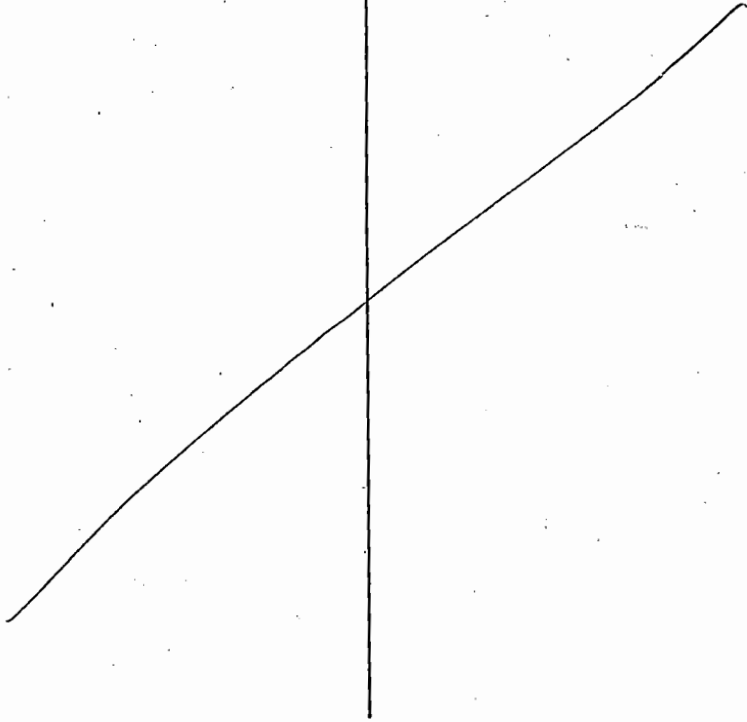
Name C.J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: All mercury initial and continuing calibration within control limits.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
					

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

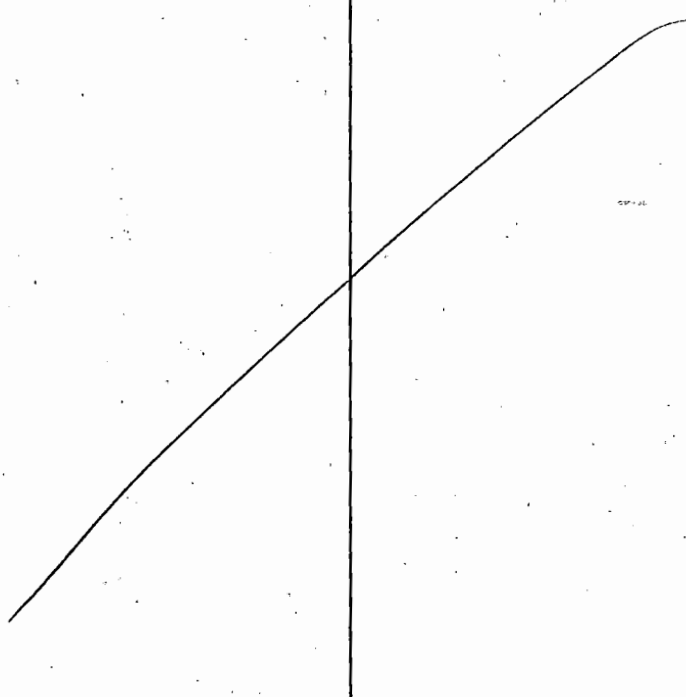
QC Check: Analytical Blank

COMMENTS: No contaminants detected in
mercury preparation blank.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



RCRA LEVEL C OC

Name C.J. Simiele

Date 10-4-90

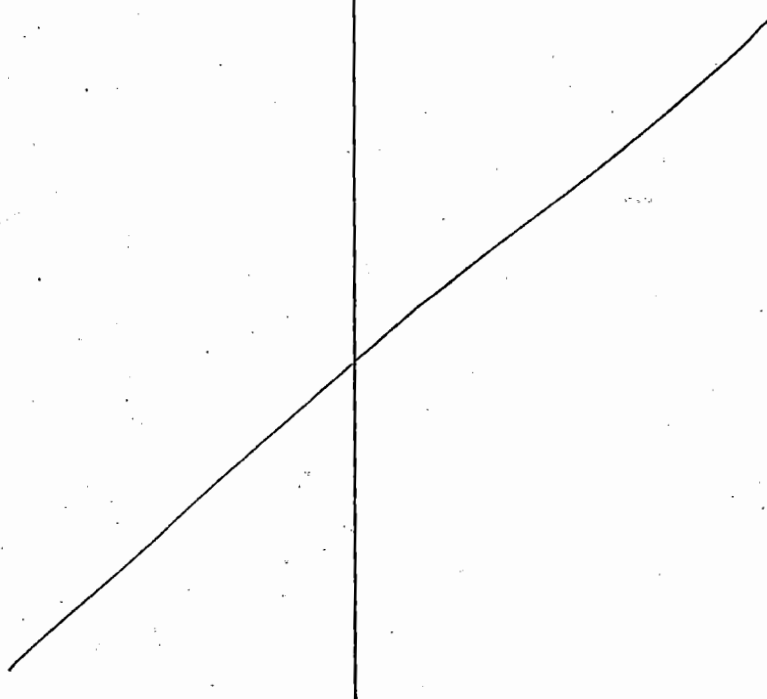
QC Check: LCS

COMMENTS: No LCS data provided with
data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



9112060130

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

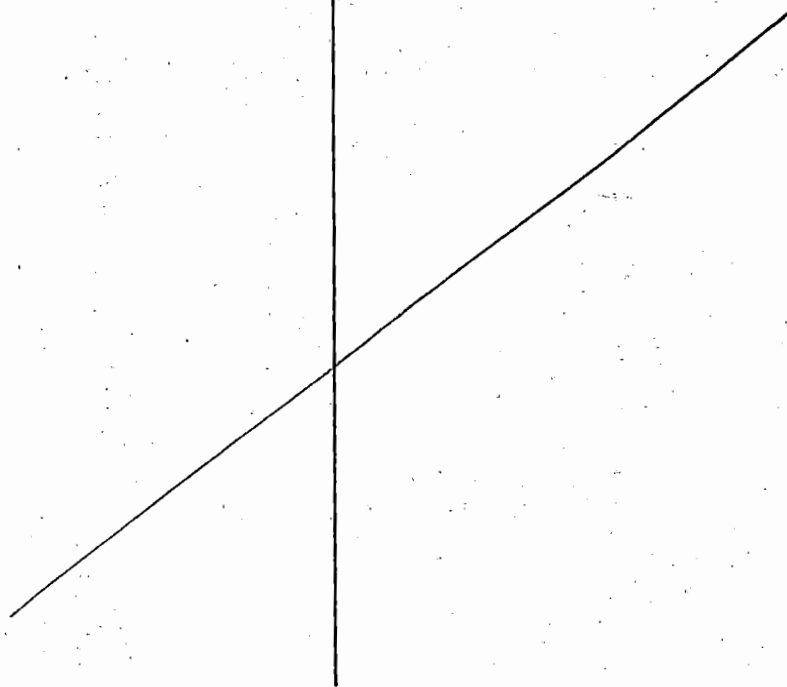
QC Check: Matrix Spike

COMMENTS: Mercury matrix spike within
Control Limits

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601322

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: Mercury duplicate analyses out of
control limits

ACTION: Qualify associated data as per OSM
guidelines.

sample # constituent value/qual

F0917

Hg

J

sample # constituent value/qual

91120601323

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Holding Time

COMMENTS: Of the fusion prepared samples, holding times were not met for ICP and T¹²⁹ analyses. All other holding times were met.

ACTION: None- Due to the unusual circumstances under which SST 241-U-110 samples were analyzed any analyses which did not meet specified holding times, will not be qualified.

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

Name C. J. SimieleDate 10-4-90QC Check: Calibration

COMMENTS: All initial and continuing un-digested calibration standards within $\pm 10\%$ control limits. Eighteen elements in initial and continuing acid-digested calibration standards out of control limits.

ACTION: qualify associated data as per OSM guidelines.

sample # constituent value/qual

sample # constituent value/qual

Sb J
 Be UJ
 Ca J
 Ce UJ
 Co UJ
 Fe J
 Li UJ
 Mo UJ
 K J
 Sm J
 Se UJ
 Na J
 Ta UJ
 Ti ↓
 Th UJ
 V UJ
 Zr UJ

____ of ____

9112061325
FO923

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Analytical Blank

COMMENTS: Possible contaminants detected
in ICP fusion prep'd samples: Sulfur

ACTION: Qualify associated samples as per
OSM guidelines.

sample #	constituent	value/qual
0923	S	u

sample #	constituent	value/qual
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9112050923

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

91120601327

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

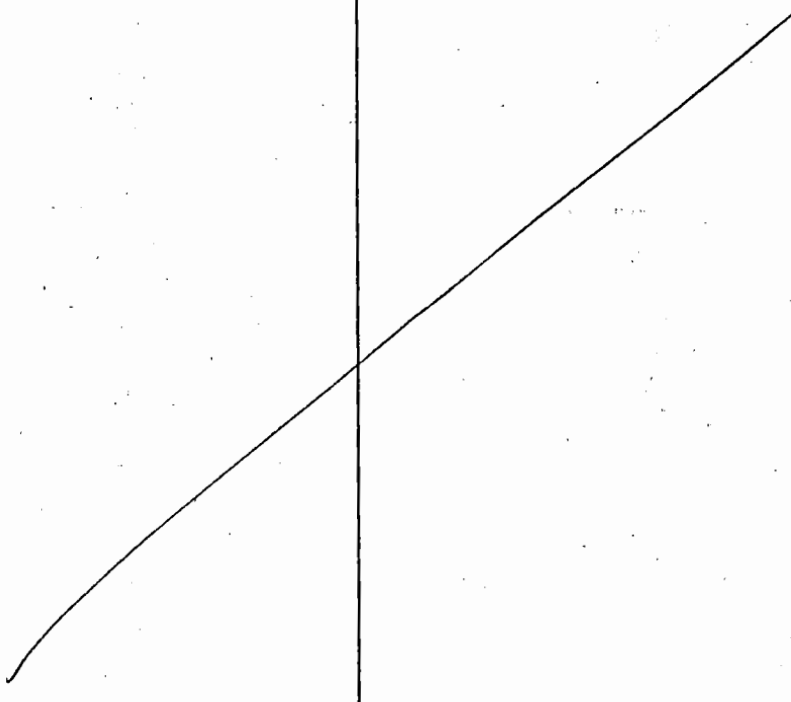
QC Check: ICS

COMMENTS: No ICS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601300

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Matrix Spike

COMMENTS: Twenty-Two elements in ^{1SP} matrix
Spike out of control limits.

ACTION: Qualify associated data as per OSM
guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
F0923	Ba	R			
	B	J			
	Cd	R			
	Ca	J			
	Ce	R			
	Co	R			
	Cu	R			
	La	UJ			
	Pb	UJ			
	Li	R			
	Mg	UJ			
	Mn	J			
	Mo	UJ			
	Ni	UJ			
	K	R			
	Ag	R			
	Sr	UJ			
	Ta	R			
	Sn	UJ			
	Ti	UJ			
	Zn	J			
	Zr	UJ			

— of —

91120601329

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: ICP fusion prep'd samples out of $\pm 20\%$

Control Limits include: Al (38%); Ba (760%); B (121%);
Ca (38%); Fe (25%); Mn (48%); Sr (51%); S (1097%); Zn (29%).

ACTION: Qualify all associated samples
as per OSM guidelines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0923	Al	J
	Ba	
	B	
	Ca	
	Fe	
	Mn	
	Sr	
	S	
	Zn	

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601330

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: Holding Time

COMMENTS: Of the water digested samples, holding times were not met for: IC, TOC (1st & 3rd leach); CO₃, NO₂, NO₃, C¹⁴, Sr⁹⁰, Hg, ICP and ammonia analyses. All other water leach sample holding times were met.

ACTION: None - Due to the unusual circumstances

Under which SST 241-U-110 samples were analyzed any samples which do not meet specified holding times, will not be qualified.

sample # constituent value/qual

sample # constituent value/qual

pH

___ of ___

21129601331

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

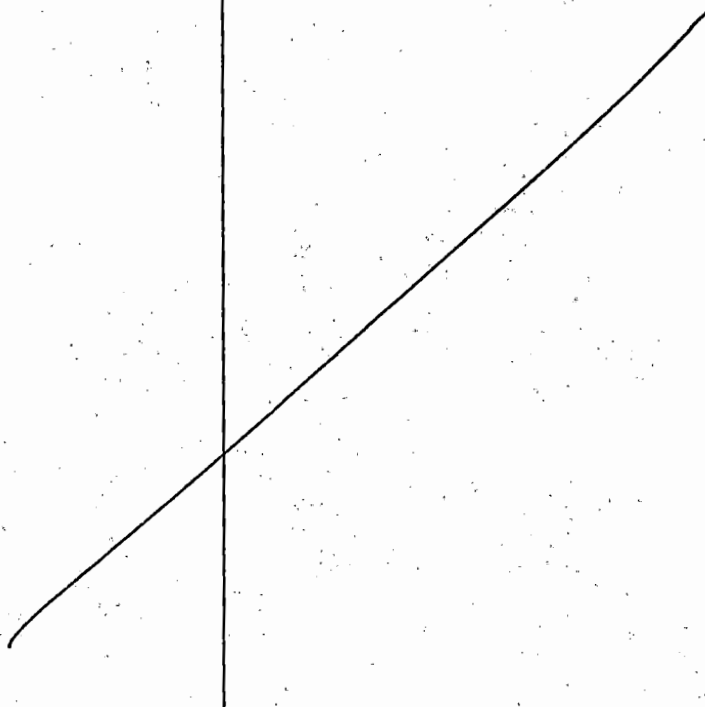
QC Check: Calibration

COMMENTS: All IC initial and continuing calibration
with in control limits. IC calibration
frequency with in control limits

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601332

RCRA LEVEL C QC

Name C.J. Simiele Date 10-4-90

QC Check: Analytical Blank

COMMENTS: Qul IC preparation blank analysis
Contaminant free.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

91120601333

RCRA LEVEL C OC

Name C.J. Simiele

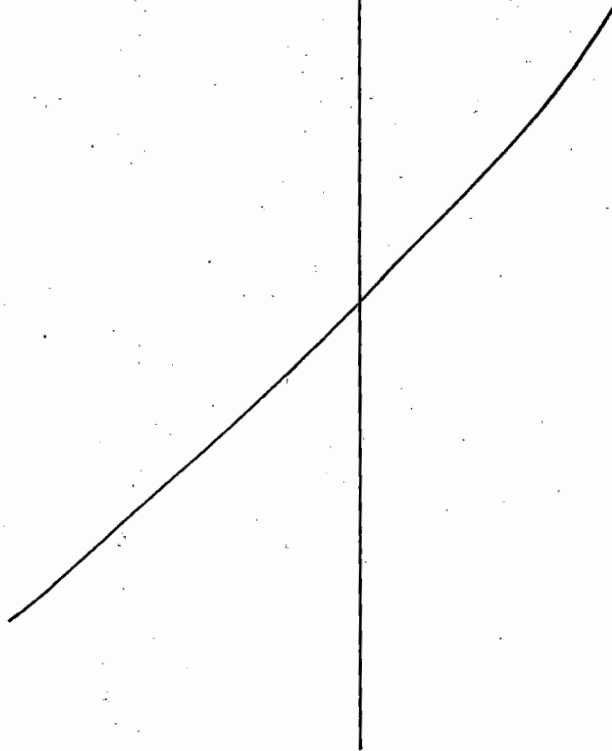
Date 10-4-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601334

RCRA LEVEL C OC

Name C.J. Simiele

Date 10-4-90

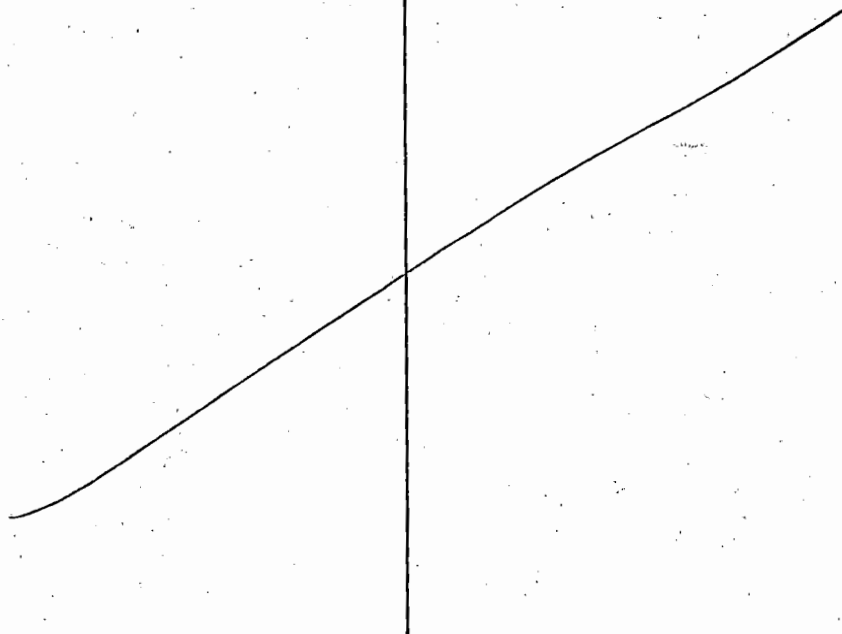
QC Check: Matrix Spike

COMMENTS: All 10 matrix spike analyses
within control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: Two ^{IC} anion duplicate analyses
out of control limits. (NO₃ and PO₄)

ACTION: Qualify associated data as per
OSM guidelines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0930	NO ₃	J
	PO ₄	J

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601336

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: Initial and continuing Toc calibration
with in control limits. Calibration
frequency with in control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

91120601337

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: Analytical Blank

COMMENTS: TOC preparation blank Contaminant
free.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

Name C. J. Simiele Date 10-4-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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RCRA LEVEL C QC

Name C.J. Simide Date 10-4-90

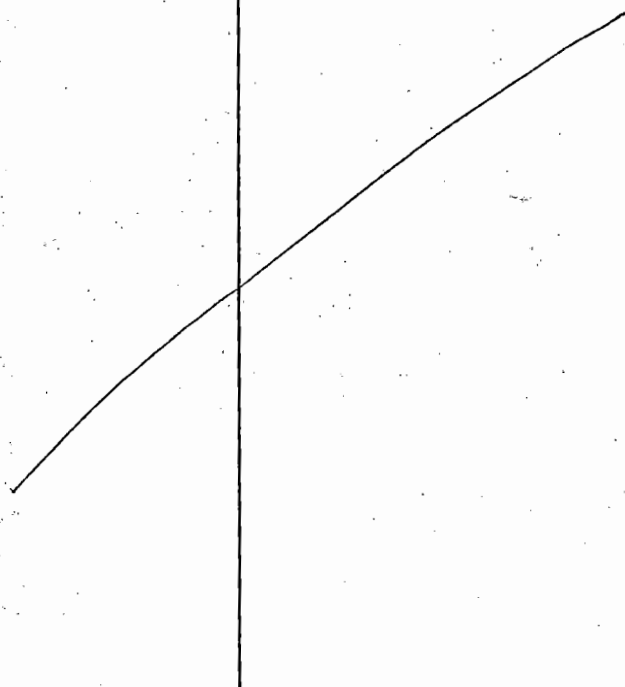
QC Check: Matrix Spike

COMMENTS: Matrix Spike Toc analyses with
in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601240

RCRA LEVEL C QC

Name C. J. Simiele Date 10-4-90

QC Check: Duplicate Analyses.

COMMENTS: TOC (1st leach) duplicate analyses
out of control limits. TOC (3rd leach) duplicate
analyses within control limits.

ACTION: Qualify associated data as per OSM
guide lines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0930	TOC (1 st leach)	J

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: Ammonia Initial and continuing
Calibration with in control limits.
Calibration Frequency with in control
limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

[A large diagonal line is drawn across the table area, from the bottom left to the top right.]

___ of ___

91120601342

RCRA LEVEL C QC

Name C.J. Simiele

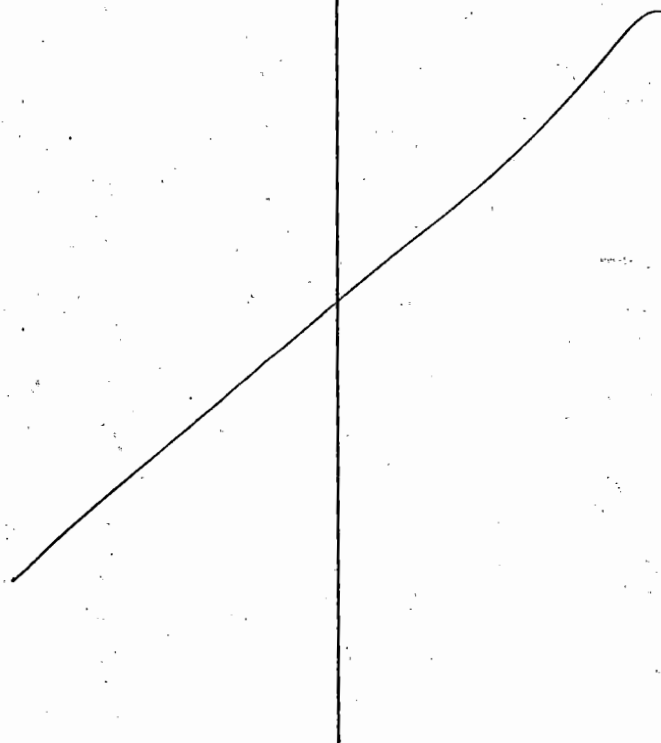
Date 10-4-90

QC Check: Analytical Blank

COMMENTS: NH₃ preparation blank appears
to be contaminant free. No D.L.'s
provided for NH₃ analysis.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601343

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

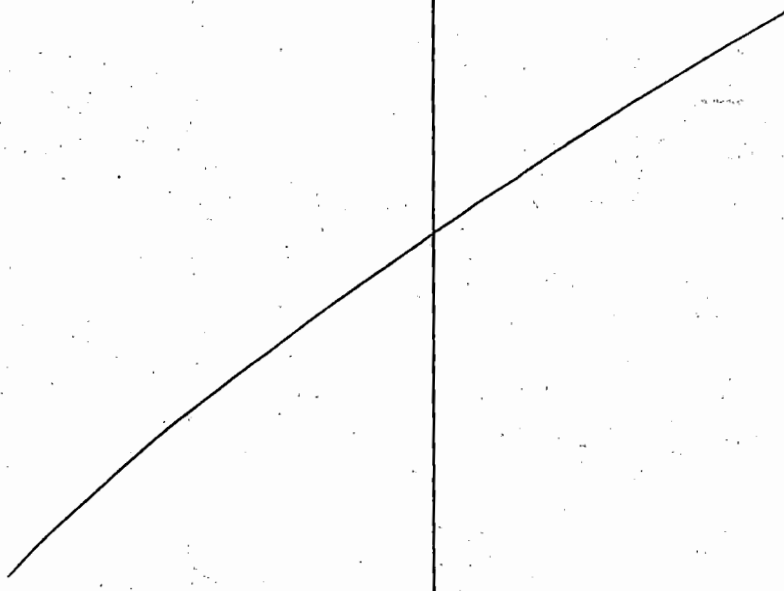
QC Check: LCS

COMMENTS: No LCS data provided with
data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601344

RCRA LEVEL C QC

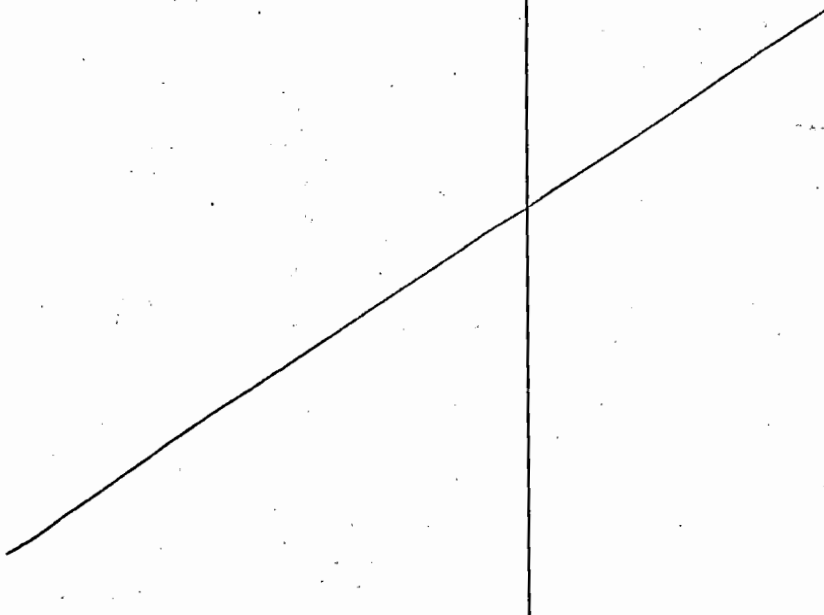
Name C.J. Simiele Date 10-4-90

QC Check: Matrix Spike

COMMENTS: Ammonia matrix spike within
control limits.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601345

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: Ammonia duplicate analyses with
in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

91120601346

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

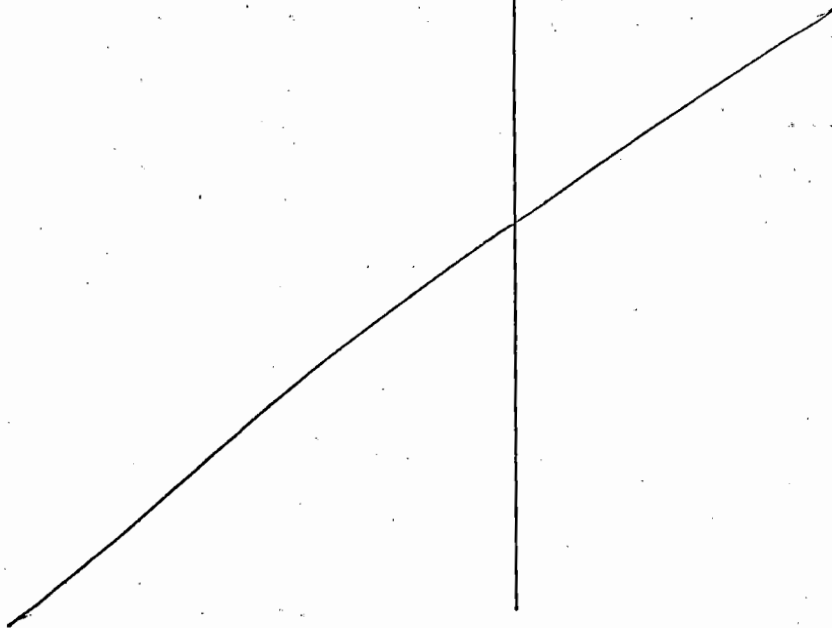
QC Check: Calibration

COMMENTS: Carbonate initial and continuing
calibration within in control limits

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601347

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

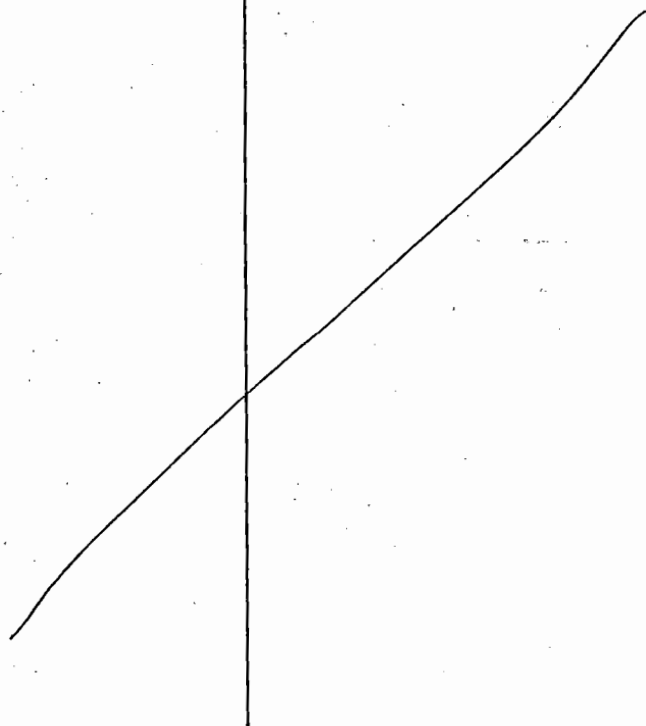
QC Check: Analytical Blank

COMMENTS: Carbonate preparation blank
Contaminant free.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601348

RCRA LEVEL C QC

Name C.J. Simiele

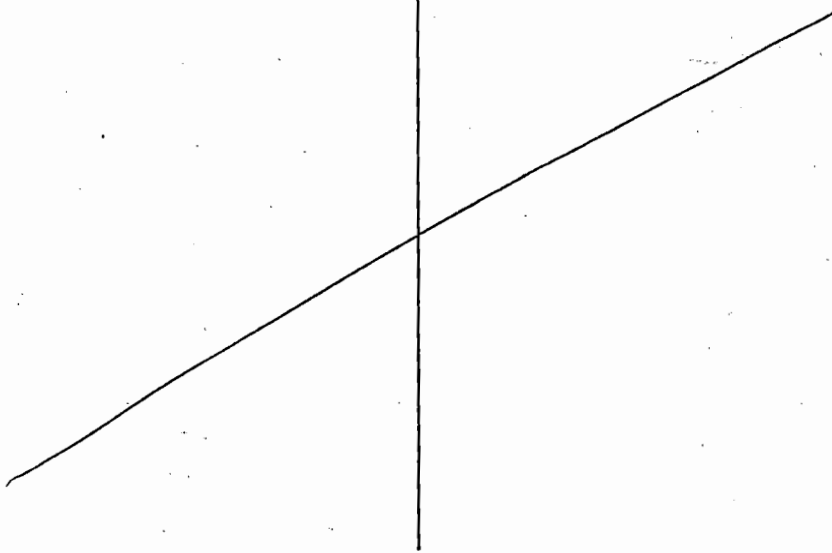
Date 10-4-90

QC Check: LCS

COMMENTS: No LCS data provided with
data package.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601349

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

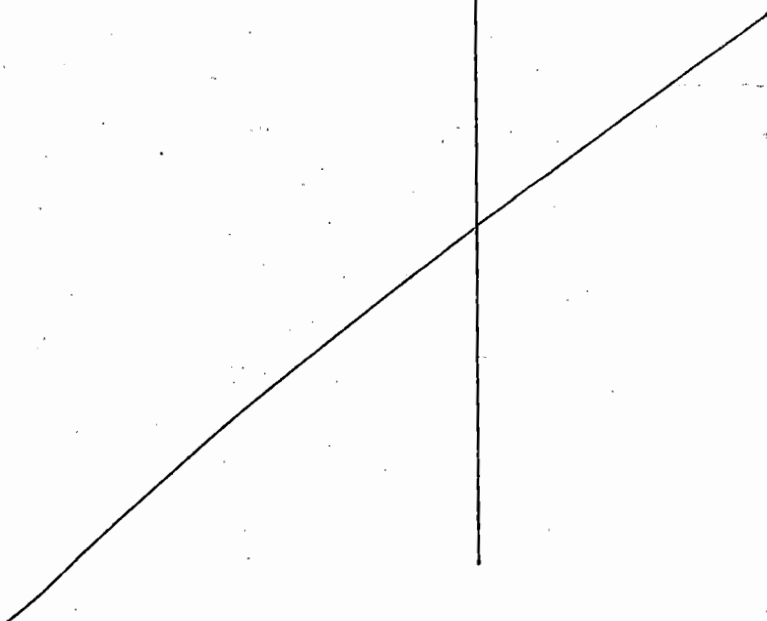
QC Check: Matrix Spike

COMMENTS: Carbonate matrix spike with
in control limits

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601370

RCRA LEVEL C QC

Name C. J. Simiele

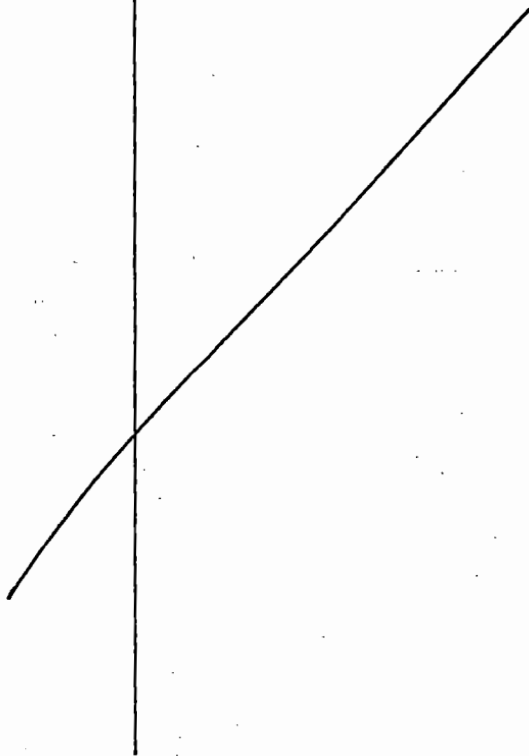
Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: Carbonate duplicate analyses
with in control limits of $\pm 20\%$.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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___ of ___

91120601351

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: No₂ initial and continuing calibration
with in control limits of $\pm 10\%$.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

9112060132

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

QC Check: Analytical Blank

COMMENTS: NO₂ preparation blank appears
to be contaminant free. No DL's provided
for NO₂ analysis.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

____ of ____

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

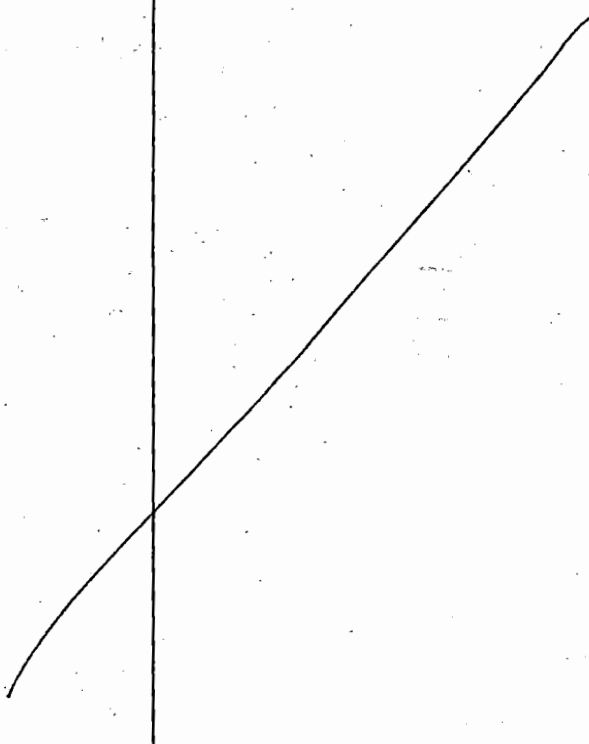
QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



911:20601354

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

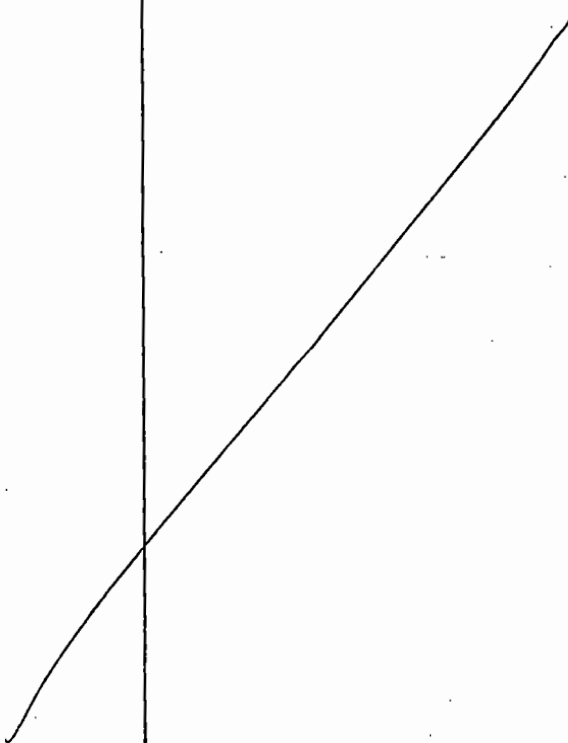
QC Check: Matrix Spike

COMMENTS: NO₂ matrix spike analyses
with in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



911206013

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Duplicate Analyses

COMMENTS: NO duplicate analyses out of
control limits.

ACTION: Qualify associated data as per
OSM guidelines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0931	NO ₂	J

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

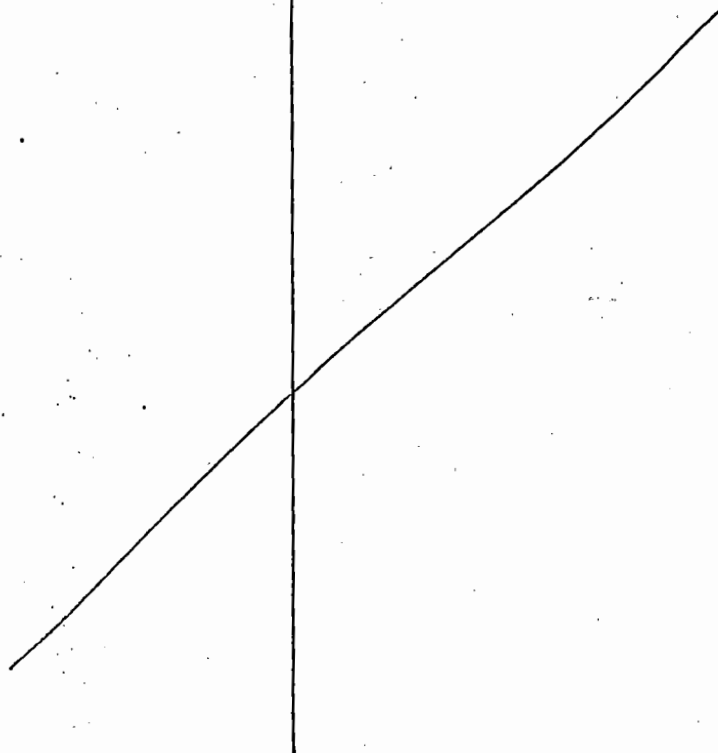
QC Check: Calibration

COMMENTS: All Hg, As, and Se initial and
continuing calibration with in control
limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601357

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-4-90

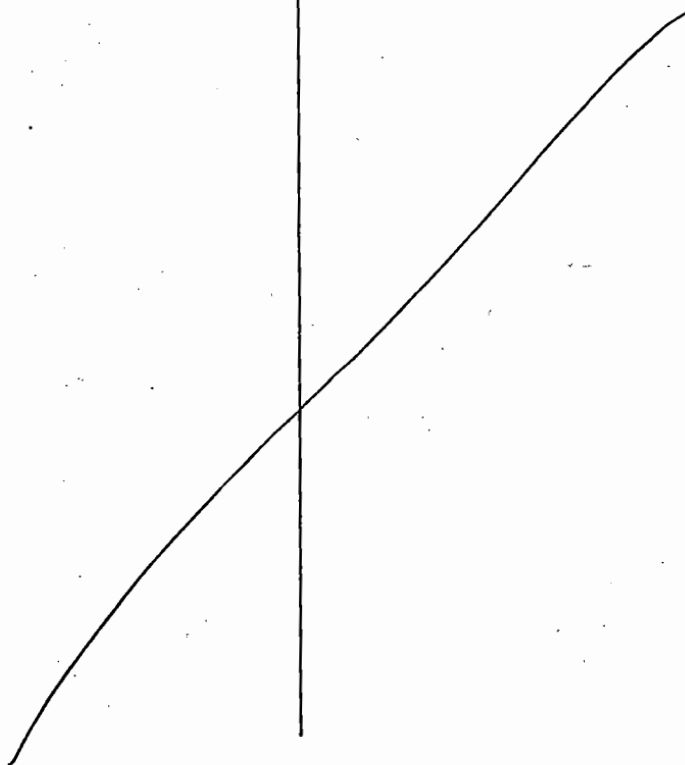
QC Check: Analytical Blank

COMMENTS: Preparation blanks for As, Se and
Hg Contaminant free.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601358

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

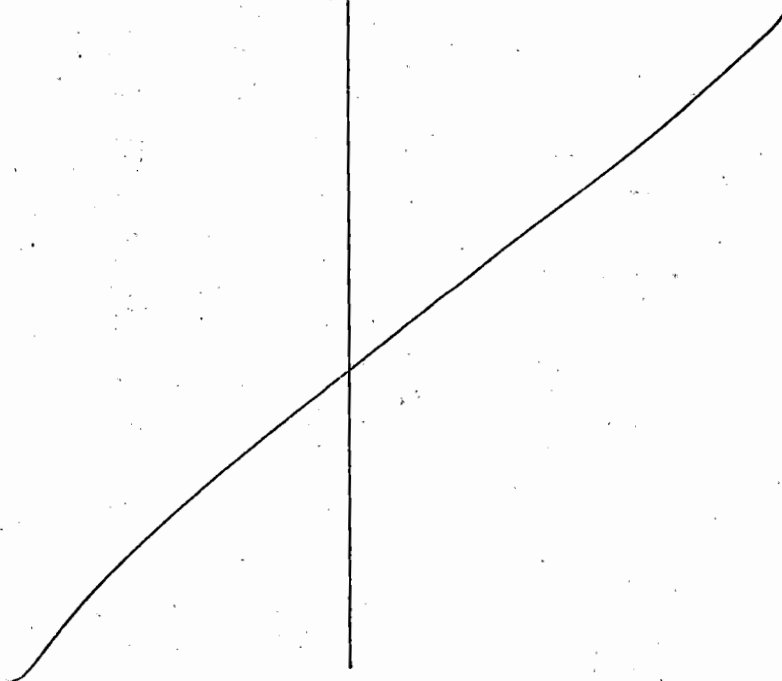
QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Matrix Spike

COMMENTS: All As, Hg and Se matrix spikes
with in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

____ of ____

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: Duplicate Analyses

COMMENTS: As and Se duplicate out of $\pm 20\%$ control
limits. (PPD=71.2% and 379% respectively).
Hg duplicate analyses within $\pm 20\%$
control limits

ACTION: Qualify associated data as per
OSM guidelines.

sample # constituent value/qual

AS J
 Se J

sample # constituent value/qual

911206 11361

0935
 ↓

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-5-90

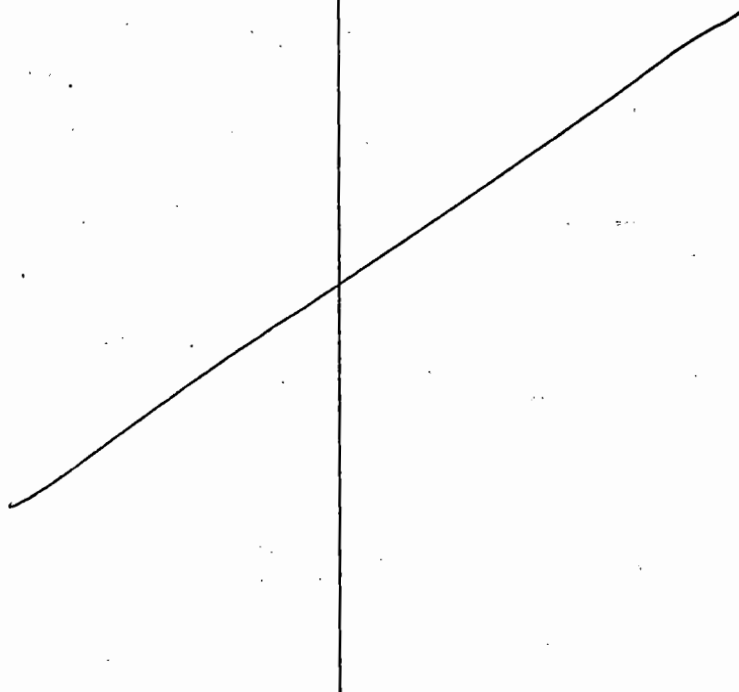
QC Check: Calibration

COMMENTS: All initial and continuing ICP calibration
with in control limits. Calibration
frequency with in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120671362

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Analytical Blank

COMMENTS: No contaminants detected
in preparation blanks and associated
samples.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

9112060133

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

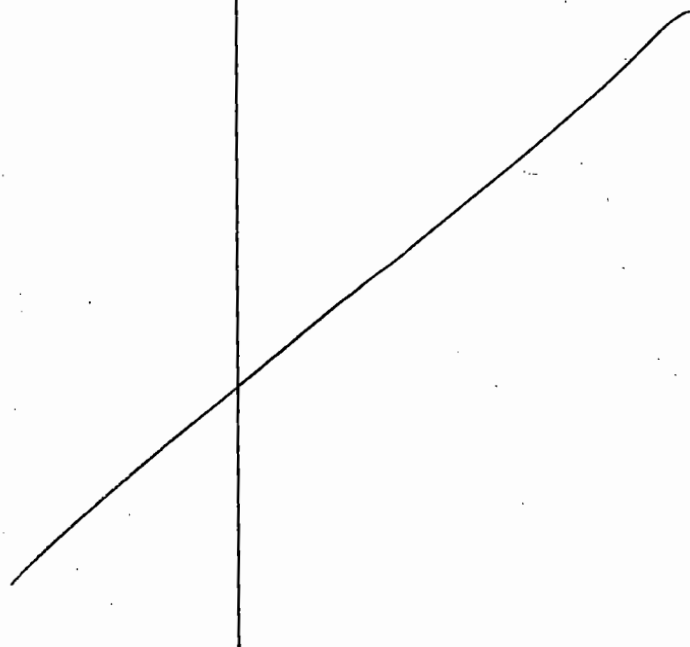
QC Check: LCS

COMMENTS: No LCS data provided with data
package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601364

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: ICS

COMMENTS: No ICS data provided with data package.

ACTION: NONE

sample # constituent value/qual

sample # constituent value/qual

91120601365

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: Matrix Spike

COMMENTS: One element (Th) in ICP matrix
Spike out of control limits.

ACTION: Qualify associated data as per OSM
guide lines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F929	Th	UJ

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601366

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: Duplicate Analyses

COMMENTS: 10P (water leach prep) duplicate analyses
out of $\pm 20\%$ control limits include: Ca (21%);
Mg (242%); Na (24%)

ACTION: Qualify associated data as per
OSM guidelines.

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
FO930 ↓	Ca	J
	Mg	↓
	Na	↓

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120601367

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Holding Time

COMMENTS: Of the acid digested samples, holding times were not met for mercury analyses. All other acid digested samples holding times were met.

ACTION: None - Due to the unusual circumstances under which SST 241-U-110 samples were analyzed any analyses which did not meet specified holding times, will not be quantified.

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-4-90

QC Check: Calibration

COMMENTS: As, Hg and Se initial and continuing
calibration with in control limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

91120601399

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-5-90

QC Check: Analytical Blank

COMMENTS: All As, Hg, and Se preparation blanks
contaminant free.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



9112001370

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual

RCRA LEVEL C QC

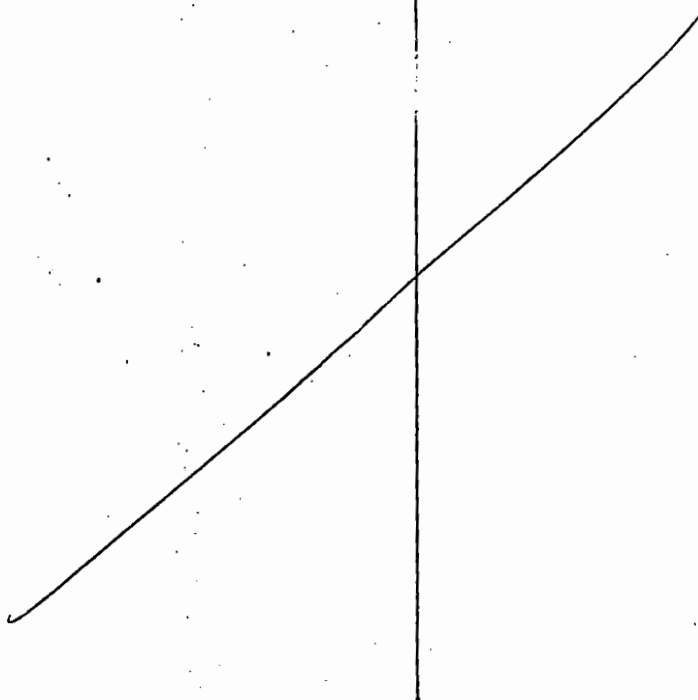
Name C.J. Simiele Date 10-4-90

QC Check: Matrix Spike

COMMENTS: As, Hg and Se matrix spike
analyses with in control limits.

ACTION: None

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91120691372

Se
Dup?

RCRA LEVEL C QC

Name C J. Simiele

Date 10-5-90

QC Check: Duplicate Analyses

COMMENTS: Hg duplicate analyses with in control
limits. As duplicate analyses out of
control limits.

ACTION: qualify associated data as per OSM
guidelines.

91120601373

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0935	As	J

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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____ of ____

RCRA LEVEL C QC

Name C. J. Simiele

Date 10-5-90

QC Check: Calibration

COMMENTS: all ICP initial and continuing
non-digested samples within control limits.
Eighteen elements in ~~each~~ digested
initial and continuing ICP standards.

ACTION: Qualify associated data as per OSM
guidelines

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
F0935	B	J
	Al	J
	Ba	J
	Ce	J
	Cr	J
	Cu	J
	Fe	J
	Li	J
	Mn	J
	Nd	J
	Ni	J
	Ag	J
	Ta	J
	Sn	J
	Ti	J
	Zn	J
Zr	J	

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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91122601374

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

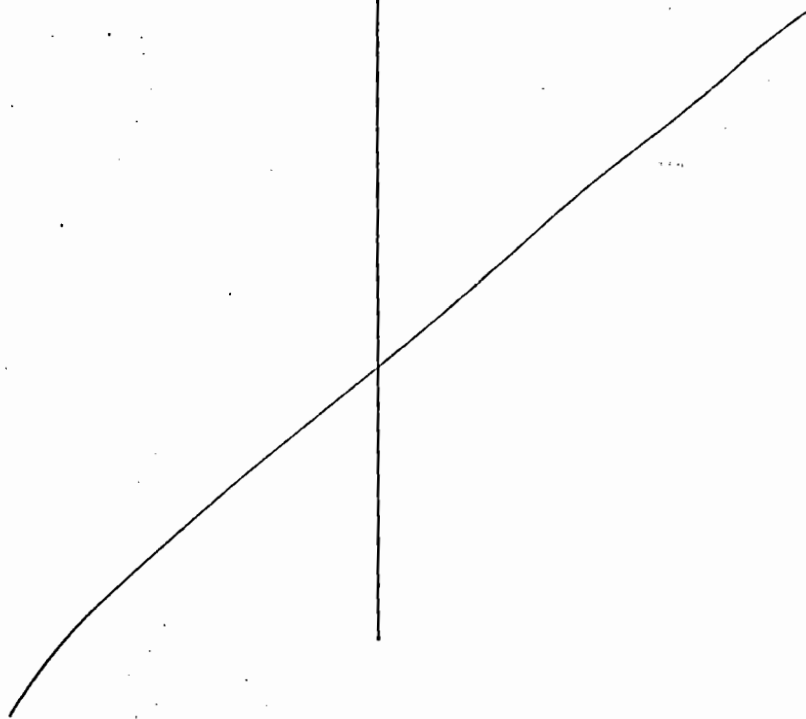
QC Check: Analytical Blank

COMMENTS: No contaminants detected in
preparation blank and associated
samples.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601375

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

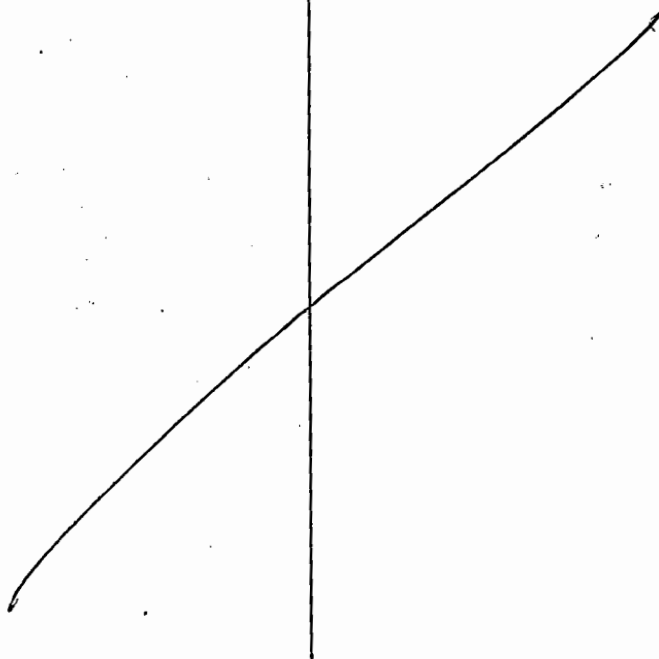
QC Check: LCS

COMMENTS: NO LCS data provided with data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



91120601376

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

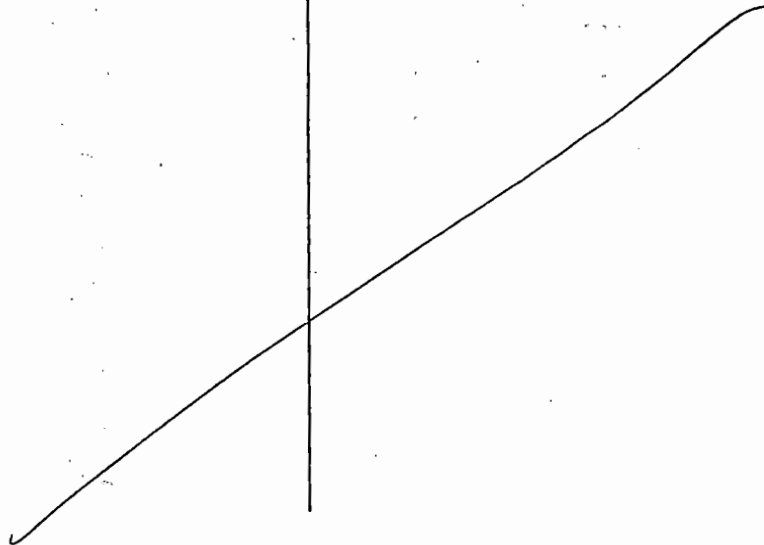
QC Check: ICS

COMMENTS: No ICS data provided with
data package.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601377

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-5-90

QC Check: Matrix Spike

COMMENTS: Twenty Three elements in ICP
matrix spike out of control limits.

ACTION: Qualify associated data as per
OSM guidelines.

9112001378

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
FO935	Ba	J
	B	J
	Cd	4
	Ca	4
	Co	4
	Cr	4
	Cu	4
	Fe	4
	Pb	4
	Mn	4
	Mg	4
	Mo	4
	Ni	4
	P	4
	K	4
	Ag	4
	Sr	4
Ta	4	
Sn	4	
Ti	4	
Zn	4	
Zr	4	

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
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___ of ___

RCRA LEVEL C QC

Name C.J. Simiele

Date 10-6-90

QC Check: Duplicate Analyses

COMMENTS: 10 P (acid digest. prep) duplicate analyses out of $\pm 20\%$ Control limits include: entire element list excluding Al. (LT assumed to equal D.L. for determining Duplicate RPD.)

ACTION: Qualify all associated data as per OSM guidelines

911206 F0935

sample #	constituent	value/qual	sample #	constituent	value/qual	RPD
F0935	As	J	F0935	Sr	J	80
	Ba	60		Se		53
	Be	89		Ag		70
	Bi	71		Na		52
	B	54		Sr		44
	Ca	60		S		54
	Co	76		Ta		84
	Cr	44		Tl		90
	Ce	83		Th		64
	Cr	57		Ti		52
	Cu	66		Sn		62
	Eu	81		Ti		62
	Fe	46		V		63
	Ga	80		Zn		61
	Pb	63		Zr		77
	Li	88				
	Mg	72				
	Mn	42				
	Hg	124				
	Mo	62				
	Ni	50				
	Ni	57				
	RPD	64 of 77				

RCRA LEVEL C QC

Name C.J. Sumiele

Date 10-10-90

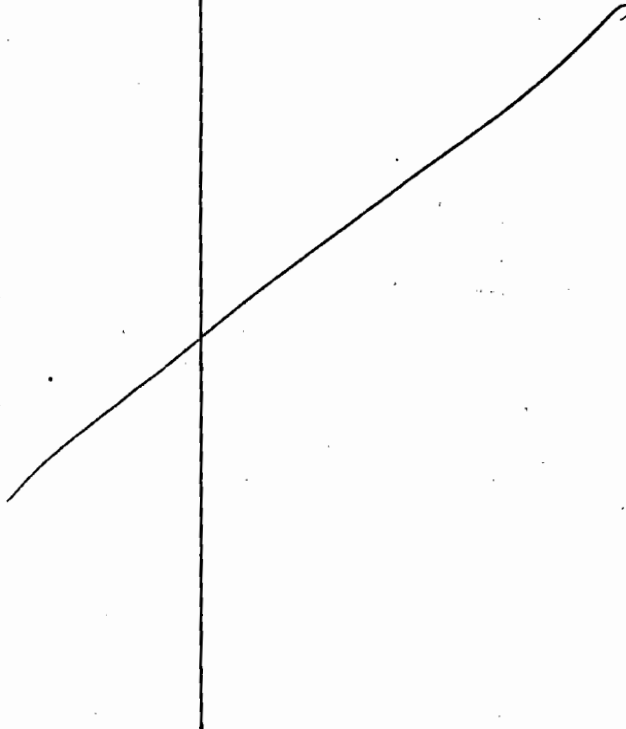
QC Check: Duplicate Analyses

COMMENTS: Both pH and % water ^{duplicate analyses} within
± 20% Control Limits.

ACTION: None

sample # constituent value/qual

sample # constituent value/qual



___ of ___

91120601390