2663-SCU-010

0045515

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFICE
3398 Carmel Mountain Road., San Diego, CA 92121-1095
P.O. Box 1620, La Jolla, CA 92038-1620

November 13, 1991

NOV 1991
RECEIVED
OSM DMO

Ms. Jeanette Duncan
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Reference No. 32359-04

Dear Ms. Owens:

Enclosed are the results from the analysis of the soil samples received by S-Cubed on October 29, 1991. This shipment includes SDG 2663. The samples were analyzed for Metals, Anions, Ammonia, and Alkalinity.

The enclosed report contains a sample summary, narrative, copies of the chain-of-custody, and a full data package for each analysis. If you have any question about the data, please give me a call.

Sincerely,

Jean E Goodin, for

John DeWald
Manager, Commercial Analysis Section

/alb

encl: a/s

OCT 1996
RECEIVED
LDMC

Westinghouse Hanford Company

Hanford Operations and Engineering Contractor for the US Department of Energy
P.O. Box 1970 Richland, Wa. 99352

NONCONFORMANCE REPORT

Page 1 of ____

No. B 06175

1. MFR/ORG: MAXWELL S-CUBED DIVISION

ITEM/MATERIAL NAME: ENVIR. SAMPLE — PART NO.: N/A

DRAWING/SPEC. NO.: ____ — REV.: N/A

PROGRAM/PROJECT: SITE-WIDE Background — P.O./W.O. NO.: ____

UNUSUAL OCCURRENCE REPORT REQUIRED: ☐ YES ☒ NO

SYSTEM/END USE: ____ — DATE: 01/28/92

2. DESCRIPTION OF NONCONFORMANCE

LABORATORY IS PERFORMING INORGANIC ANALYSIS (SOIL) WITHOUT UTILIZING A SOLID MATRIX LCS FOR CLP METALS ANALYSIS.

EXAMPLES: SDG # 2630 & 2633

NOTE: THE LAB INDICATES THAT ALL METAL ANALYSIS (CLP) HAVE BEEN PERFORMED WITHOUT A SOIL LCS.

3. REQUIREMENT VIOLATED

"ONE SOLID LCS MUST BE PREPARED & ANALYZED FOR EVERY GROUP OF SOLID SAMPLES IN A SAMPLE DELIVERY GROUP....."

DOCUMENT	REV	ZONE/PARA
CLP SOW INORGANICS	2/88	PART E, SECTION V, ITEM #8

M.A. Beck — ORIGINATOR
12500/05M — ORGANIZATION
01/28/92 — DATE

4. ASME CODE ITEM(s) ☐ NO ☐ YES. NOTIFY AUTHORIZED INSPECTOR.

WHC QAR ____

5. CAUSE OF NONCONFORMANCE

☐ PROCEDURES ☐ PERSONNEL ☐ MATERIALS
☐ EQUIPMENT ☒ OTHERS

REMARKS: See 8A

PR-07, EQ-001-007

6. CORRECTIVE ACTION TO ELIMINATE CAUSE

- S^3 has obtained and is currently using a solid LCS sample for the QC requirement (see S^3 Letter to T. Washington 3/2

INITIATION DATE ____ SERIAL NO. ____

RESPONSIBLE ORG. REP. ____ TITLE ____ DATE ____

7. RECOMMENDED DISPOSITION ☒ ACCEPT ☐ REJECT ☐ REPAIR ☐ REWORK ☐ OTHER

8A. DISPOSITION JUSTIFICATION AND INSTRUCTIONS

S^3 did perform the LCS at the required frequency using an aqueous standard prior to receiving and testing the solid LCS. The aqueous LCS results were evaluated in the applicable data packages and performance was documented with the validation paperwork.

8. ADDITIONAL REVIEWS REQUIRED (WHC ONLY) ☐ YES ☒ NO

IF YES, IDENTIFY:

9. SUPPLIER ENG. ____ SUPPLIER QA ____

10. DISPOSITION APPROVAL (WHC ONLY)

☒ APPROVED ☐ DISAPPROVED
☐ OTHER (SEE CONTINUATION SHEET)

J.A. Hoover — COGNIZANT ENGINEER — DATE 5/21/92

LW VANCE L.W. Vance — COGNIZANT QA ENGINEER — DATE 5/21/92

NA — AUTHORIZED INSPECTOR REVIEW — DATE

11. ADDITIONAL APPROVALS

NAME	TITLE	DATE	NAME	TITLE	DATE

12. DISPOSITION ACTION COMPLETE

L.W. Vance — NAME — DATE 5/21/92 — QTY. ACCEPT NA — QTY. REJ. NA

FOLLOW ON NCR

QA LOG NO. 3A-92-013

The issuance and acceptance of this request in no way limits or affects the warranty provisions of the order. This request shall not establish a precedent or obligation to accept similar conditions in the future.

FOLLOW-UP LEVEL A ☐ B ☐ C ☐

310-104 (4-87)

MAXWELL
S-CUBED Division

SORRENTO VALLEY OFFIC
3398 Carmel Mountain Road., San Diego, CA 92121-10
P.O. Box 1620, La Jolla, CA 92038-16

March 27, 1992

Ted Washington
MSIN: T6-08
Office of Sample Management
Westinghouse Hanford Company
2355 Stevens Drive
Richland, WA 99352

Dear Mr. Washington:

We have recently been able to validate and confirm true values for the ERA solid LCS source using the CLP method. The validation study was performed by preparing and analyzing ten solid LCS samples using the CLP method and determining the average value obtained for each analyte and the appropriate windows of acceptability. This validation study was required by the solid LCS source since the certified true value determinations were based on the method 3050, SW-846 (see attached sheet).

Prior to the availability of validated solid LCS for CLP soil analysis, EPA-approved aqueous LCS spike solution was spiked into a clean, empty beaker and then prepared and analyzed by the CLP soil method. Thus quality control requirements for preparation and analysis are acceptable and confirm the reliability and validity of the associated samples using the available LCS at that time.

Sincerely,

Wipawan Nisamaneepong

Wipawan Nisamaneepong, Ph.D.
Inorganics Laboratory Manager

Instructions for the use of

PriorityPollutnT™/CLP Quality Control Standards

Inorganics in Soil **Caution:** Read instructions carefully before opening PriorityPollutnT™/CLP standards.

PriorityPollutnT™/CLP Quality Control Standards are designed to test your complete inorganic priority pollutant and CLP analysis procedure. The Trace Metals solid standard contains 24 trace metals (refer to the back of this sheet for a complete list). The Cyanide solid standard is designed for cyanide analysis, either a simple or a complex cyanide, or both, may be present.

I. Standard Preparation

The standards must be prepared by the following directions before analysis.

A. Trace Metals

Digest the standard using Method 3050, SW-846. This digestion is essentially a hot acid leach of the standard and is not a total digestion. The standard should then be analyzed by ICP and/or atomic absorption. Results different from the certified values will be obtained if a total digestion using hydrofluoric acid, perchloric acid or fusion is employed. Digest and analyze the sample for mercury using Method 7471, SW-846.

B. Cyanide

Prepare the standard using Method 9010 or 9012, SW-846. The preparation quoted is intended for use with an aqueous waste. The only required modification is to place 10 grams of the soil standard into the appropriate aliquot of water in the distillation flask (step 7.2.1). All other preparation steps should be followed. The digestate obtained is then analyzed for cyanide using Method 9010 (manual) or 9012 (automated), SW-846.

II. Standard Storage

Store the standards in a cool, dark place. The stability and certified values are unconditionally guaranteed for one year. Due to possible sample contamination, the guarantee is void after the standards are opened.

III. Standard Analysis

Remember ... PriorityPollutnT™/CLP standards are designed to help you evaluate the accuracy of your routine laboratory procedures. Therefore, analyze PriorityPollutnT™/CLP standards using your regular methods.

IV. Certified Results

The ERA certified and advisory range of values are included. The advisory range is the range of values that an experienced laboratory can expect to attain using the most precise methods and equipment. Certified and advisory values for ERA inorganic quality control standards are based on analytical results from applicable EPA reference methods. Certified values represent 100% recoveries for the analyses. Since many inorganic analytical methods do not yield 100% recoveries, especially for soil samples, ERA advisory ranges reflect typical recoveries from samples for the applicable EPA methodologies. The advisory ranges for these standards are wider than for ERA aqueous standards due to the variability of the SW-846 preparation methods.

SW-846

Inorganics in Soil has been prepared using a cleaned, dried and sieved topsoil substrate. The final product was digested by a variety of methods, including the recommended 3050 (SW-846), to evaluate the effect of digestion variability on the results the laboratory should obtain. The certified values and advisory ranges shown on the accompanying certification sheet were arrived at after extensive evaluation of the experimental results. It should be noted that antimony and molybdenum are especially difficult to quantitatively recover using Method 3050. Low recoveries may also be experienced for arsenic, selenium, silver, thallium and vanadium. The advisory ranges for these elements have been adjusted to reflect this fact.

Experiments conducted by ERA using a "weak acid" digestion with only hydrochloric acid significantly improved the recovery of antimony. Digestion of Inorganics in Soil by a closed vessel microwave methodology also decreased the recovery of silver to <10% of the certified value. High recoveries of the metals native to the soil matrix (e.g. aluminum, calcium, manganese, iron and magnesium) indicate a too vigorous digestion procedure. In general, it should be noted that Method 3050 is not an extremely rugged methodology and close attention should be paid to the procedure to insure recovery of the listed elements within the advisory ranges. ERA stresses that it is the responsibility of the individual laboratory to determine acceptable levels of performance for a particular analytical result depending on the intended use of the data.

* CLP

V. Safety

ERA products may be hazardous and are intended for use by professional laboratory personnel trained in the competent handling of such materials. Responsibility for the safe use of these products rests entirely with the buyer and/or user. If you need a Material Safety Data Sheet for any ERA product, please call toll-free at 1-800-ERA-0122.

MAXWELL
S-CUBED Division

FAX

TO:	M. Beck
FROM:	J. Goodin
DATE:	January 22, 1992
FAX NO:	(509) 373-3992
Pages to follow:	0

At S-Cubed, we do not have access to the EPA's solid LCS sample described in the CLP protocols because we are not currently under CLP contract with them for inorganic analysis. It might be possible to obtain some other solid reference material, but we have not yet found one containing all or even most of the metals. In the Quality Assurance Project Plan for Westinghouse Hanford Company, no solid LCS is specified and no solid LCS is discussed in the SW-846 (RCRA) methods. The LCS is used to determine laboratory consistency, for which purpose the liquid LCS is sufficient and allows us to monitor all of the metals of interest. We have recently analyzed a purchased solid reference standard, containing five of the metals, and would be glad to furnish you with these results. I hope that this explanation will satisfy your client. If you have any other questions or comments, please call me at (619) 587-8409.

CORRESPONDENCE DISTRIBUTION COVERSHEET

To: Distribution

From: Environmental Quality Assurance
H4-16 / 6-8557 / 6-9490

Subject: DISTRIBUTION OF NCR #B06175 (EQA-92-013)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	W/att
		M. A. Beck	T6-08	
		J. H. Kessner	T6-08	
		J. D. Hoover	H4-57	
		L. W. Vance	H4-16	
		APA	B5-20	
		QUEST	L4-86	
		EQA File	H4-16	

Jeanette
Fancy
Ford
Jeff

MAY 1992
RECEIVED
J.H. KESSNER

SAMPLE SUMMARY

S-Cubed Reference No. 32359-04, SDG No. 2663, Project Name: Site Wide Soil

Sample ID	S-Cubed Sample No	Date Received	Sample Type	Analysis									
				A	B	C	D	E	F	G	H	I	J
BO14G7	2663-1	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14G8	2663-2	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14G9	2663-3	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B57	2663-4	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B58	2663-5	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B59	2663-6	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B60	2663-7	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B61	2663-8	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B62	2663-9	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B63	2663-10	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14J9	2663-11	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1

Analysis Key:

A=Ti
B=Zr
C=ICPCLP-M
D=FURNCLP
E=HGCLP
F=ANIONS
G=N-NH3
H=ALK
I=Si
J=Mo

NOV 1991
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OSM DMO

1b

MAXWELL
S-CUBED Division

NARRATIVE

DATE: November 13, 1991

REFERENCE NO.: 32359-04, SDG 2663

CLP METALS + MO, TI, ZR

The samples were analyzed according to the 2/88 CLP Inorganics Statement of Work and method 6010. GFAA dilutions were required for several samples at a dilution factor of 11 for As, Se, Pb, and Tl. There were significant levels of several analytes detected in the samples.

The quality control results were generally acceptable. CCV recoveries for Ti do not meet CLP criteria. The Se was diluted out of the matrix spike sample during analysis, thus there was no recovery. Sb and Hg show no recoveries for the matrix spike. Sb meets quality control criteria for the post-digestion spike. Duplicate values for several metals are out of criteria due to the soil matrix. The LCS percent recovery was high for Tl, but there was no Tl detected in the samples.

Jane E Hoodin, for

John DeWald
Manager, Commercial Analysis Section

1C

Westinghouse Hanford Company

CHAIN OF CUSTODY

Priority samples

Project 91-075

Custody Form Initiator: C. D. Kramer

Company Contact: Chris Kramer

Telephone: (509) 376-4186

Project Designation/Sampling Locations: Site-wide Background - Site #3 ("y" Pit)

Collection Date: 10/24/91

Ice Chest No.: RM 100

Field Logbook No.: WHC-N-438

Bill of Lading/Airbill No.: 2474253859

Offsite Property No.: W92-0-0014 #6

Method of Shipment: Emery

Shipped to: S-Cubed San Diego, CA

Possible Sample Hazards/Remarks: None

Sample Identification

B014G7 (3) 120-ml jars
B014G8
B014G9
B01B57
B01B58
B01B59
B01B60
B01B61
B01B62
B01B63

B014J9 0 jars - Sample no. to be used for reporting additional prep blank. Blank generated at S-Cubed - not enclosed.

☐ Field Transfer of Custody

CHAIN OF POSSESSION

(Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
C. D. Kramer C. D. Kramer	T. Dufton	10/29/91 10:00am
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

1d

A-6000-407 (12/90)

Tee Chest RM100

Westinghouse Hanford Company

SAMPLE ANALYSIS REQUEST

Priority Samples Project 91-075

PART I: FIELD SECTION

Collector C. Kramer Date Sampled _____ Time _____ hours

Company Contact Chris Kramer Telephone (509) 376-4186

Sample Number	Number and Type of Sample Containers	Type of Sample*	Analysis Requested
B014G7	(3) 120-ml	Soil	See attached Tables A-1, A-2
B014G8	↓	↓	Each sample is to be analyzed
B014G9			for all analytes by the method
B01B57			shown except for fluoride.
B01B58			Fluoride may be done by
B01B59			ion chromatography.
B01B60			
B01B61			
B01B62			
B01B63	↓	↓	
B014J9	0 jars	None	Additional prep blank for all
			analyses. This sample number
			is to be used for reporting
			this request.

Field Information** Sites #3

Special Handling and/or Storage Sieve samples. Use the less-than 2 mm size fraction in analytical aliquots. Exclude stones, etc. larger than 2mm.

Possible Sample Hazards None.

PART II: LABORATORY SECTION

Received by _____ Title _____ Date _____

Analysis Required _____

1e

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

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

A-6000-406 (05/90)

MAXWELL S-CUBED Division

Lot No. 2663

Sample Log-In Sheet

DC No. ____-____-____

Date Received 10/29/91 Date Sampled 10/24/91

Time Received 10:30 am

Received by (Sig.) S. Dixon

Airbill No. 247425385-9

Charge No. 32359-04

Client Code WHC

Custody Seals Present/Intact (Y) N

Chain of Custody Present (Y) N

Client Forms Present (Y) N

Reporting Format: Summ. CLP Summ. (Full CLP) Disk

Turnaround Req'd: 45d ~~30d~~ 21d 14d 48hr Other 10d

Quality Control Req'd: Level 1(Low) (2(CLP)) 3(RCRA) 4(Other)

Case No./Proj. Code Site Wide Soil SDG No. 2663

S-Cubed No.	Sample Identification	Samp. Type	No. Cont.	Samp. Cond.	Samp. Stor.	A	B	C	D	E	F	G	H	All Info Agree	Notes
2663-1	B014G7	S	0/3	OK	WA	X	X	X	X	X	X	X	X		* Prep Blank generated by Lab.
2	14G8														
3	14G9														
4	1B57														
5	1B58														
6	1B59														
7	1B60														H Si I
8	1B61														G ALK H
9	1B62														F ANIONS F
10	1B63														E N-NH3 G
* 11	B014J9		0												D HGCLP E
															C FURNCLP D
															B ICPCLP - Zn, Mo, Ti C B J A
															A ICPCLP, C

Container Types

Water ____

Soil ____

S = Soil/Sediment/Sludge
W = Aqueous
NAL = Non-Aqueous Liquid
NSS = Non-Soil Solid

Water MS, MSD ____

Soil MS, MSD ____

SDG Complete (Y) N

Review JD 10/29/91

SC-03, Rev. 7/91

Next Day Delivery

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT)
Westinghouse Hanford Co.		~~W91-0-0879~~ W92-0-2214 6

PART I – TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
Env. Engineering	Technical Baseline	

The following items are to be shipped from [X] Contractor [ ] Vendor

Routing Emery [X] Contractor [ ] Vendor

Shipped to	Off-site Custodian
S-Cubed 3398 Carmel Mt. Rd. San Diego, CA 92121-1095	John Dewald
	Full Title Project Coordinator

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 46	Poly Ice Chest (~~RM #1-1~~ RM 100) Glass jars of soil packed in ~~Vermiculite~~ and blue ice. 5 jars - E-1467 E-1467 E-1467 E-1257 thru E-1263	

[ ] Classified [ ] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available on site.

Bill of Lading # 2474-5375 9

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
Background Site	C. D. Kramer	376-8186

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
1/28/91	~~EK16A~~ 81223	

Originated By	Date	Authorized By	Date
C. D. Kramer 14:15	1/28/91	[signature]	10/28/91

Signature and Name of Property Control	Custodian Date	Property Management Approval	Date
		[signature]	10/28/91

PART II – TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
[signature]				
Date 10 28 91				

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

1G 1G

54-3000-479 (09/89)

EMERY WORLDWIDE — A CF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

(104)

DATE: 10-28-91 SHIPMENT NO.: 247425385 9
SHIPPER: WESTINGHOUSE SHIPPING DEPT (509) 376-6665
REFERENCE NO.: W92-0-0014 [illegible] #6

SHIPPER NAME AND ADDRESS

WESTINGHOUSE SHIPPING DEPT (509) 376-6665
G2-06 US DEPARTMENT OF ENERGY C/O
WESTINGHOUSE HANFORD COMPANY
2355 STEVENS DRIVE 1163 BUILDING
PO BOX 1970
RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS

JOHN DEWALD
S-CUBED
3398 CARMEL MT. ROAD
SAN DIEGO CA 92121-1095

Pieces	Weight	Description/Marks	Emery Authorization No.
1	46 LBS	W92-0-0014 #6 ICE CHEST RM 100 SOIL SAMPLES	

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. [illegible]	[illegible]	[illegible]	[illegible]
2. [illegible]	[illegible]	[illegible]	[illegible]
3. [illegible]	[illegible]	[illegible]	[illegible]
4. [illegible]	[illegible]	[illegible]	[illegible]
5. [illegible]	[illegible]	[illegible]	[illegible]
6. J. T. HOPKINS E.WW	SAN	[illegible]	0950 10/29/91
7. J. DIXON S-Cubed	SAN	[illegible]	10:30 10/29/91
8.			

SPECIAL HANDLING INSTRUCTIONS

DESTINATION TERMINAL COPY

CARGO NETWORK
1-800-547-7660
HORIZON AIR

AIRWAY NUMBER
481- 5C3335 0553

FINAL AIRPORT DESTINATION
SEATTLE

DATE 10/28

C.O.D.

TO	VIA
SEA	QX

TOTAL NO. PIECES 25

TOTAL SHPMT WEIGHT 869

WEIGHT OF THIS PIECE

HA901

PLEASE TYPE OR USE BALL POINT PEN. BEAR DOWN FIRMLY!
KEEP MARKS WITHIN BOXES TO ASSURE ACCURACY

FORM NO. 80001-46

FORM OF PAYMENT

CASH ☐ GBL/CBL ☐ FCCOD ☐

PPD ☒ COL ☐ OTH ☐ COMAT ☐

2663
32357
104

EMERY WORLDWIDE A CF Company

SERVICES

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

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

PULL FOR SHPT. NO. TAB

Shipper's Account Number: E 850281585

Date: 10-28-91 | Origin: PSC | Shipment Number: 2474253859

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

To:
JOHN DEWALD
S-CUBED
3398 CARMEL MT. RD.
SAN DIEGO CA

J. Dixon 10/29/91 10:30 Am

Tariff Dest. | Gateway

Check to Shipper $

Hold for Pick Up ☐

Canada ☐

EMERY WORLDWIDE will collect consignee's check made payable only to the shipper for the value of the goods in the amount shown above.

Customer's Reference Numbers: W81223 PK1BB W92-0-0014#6

Zip: 99352

E Consignee's Account Number

Zip: 92121-1095

Description	Pos.	L	W	H	Total Pieces	Total Weight (in Lbs.)
1 ICE CHEST RM 100 SOIL SAMPLES W92-0-0014#6	1	15	16	17	1	46

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

Declared Value $

2474253859

TDOSS ☐ Haz Mat ☐ Exp ☐ A B C D E F G H I J K

1 2 3 4 5 6 / 7 8 9 0 1 2

OVERNIGHT DELIVERY
SIGNATURE SECURITY SERVICE

Envelope 9X12 ☒ Pack 12X15 ☒

Shipper's Signature X 10/28/91

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- $

SAN-A

Terms and Conditions on Back

CONSIGNEE — PACKAGE COPY — 4

13

EMERY EFFICIENCY LINE® 22-206

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-1

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-1____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7940		*	P
7440-36-0	Antimony	5.9	U	N	P
7440-38-2	Arsenic	3.2		N	F
7440-39-3	Barium	87.7			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	10100			P
7440-47-3	Chromium	10.7		*	P
7440-48-4	Cobalt	13.6			P
7440-50-8	Copper	18.0		*	P
7439-89-6	Iron	27600			P
7439-92-1	Lead	6.8			F
7439-95-4	Magnesium	5640		*	P
7439-96-5	Manganese	397		*	P
7439-97-6	Mercury	0.83		*	CV
7440-02-0	Nickel	13.8		*	P
7440-09-7	Potassium	1510		*	P
7782-49-2	Selenium	4.6	U	N	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	291	B		P
7440-28-0	Thallium	3.5	U	*	F
7440-62-2	Vanadium	61.2			P
7440-66-6	Zinc	54.7			P
7439-98-7	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G7

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7/88

00002

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-1

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-1____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1860			P_
7440-67-7	Zirconium	24.9			P_

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G7

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-2

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-2____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _96.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7420		*	P
7440-36-0	Antimony_	5.8	U	N	P
7440-38-2	Arsenic__	4.7		N	F
7440-39-3	Barium___	69.5			P
7440-41-7	Beryllium	0.83			P
7440-43-9	Cadmium__	0.31	U		P
7440-70-2	Calcium__	6330			P
7440-47-3	Chromium_	12.3		*	P
7440-48-4	Cobalt___	7.9			P
7440-50-8	Copper___	9.3		*	P
7439-89-6	Iron_____	16600			P
7439-92-1	Lead_____	4.8			F
7439-95-4	Magnesium	4150		*	P
7439-96-5	Manganese	300		*	P
7439-97-6	Mercury__	0.10	U	*	CV
7440-02-0	Nickel___	11.6		*	P
7440-09-7	Potassium	1270		*	P
7782-49-2	Selenium_	4.6	U	N	F
7440-22-4	Silver___	1.0	U		P
7440-23-5	Sodium___	196	B		P
7440-28-0	Thallium_	3.4	U	*	F
7440-62-2	Vanadium_	37.0			P
7440-66-6	Zinc_____	33.3			P
7439-98-7_	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1468

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-2

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-2____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _96.3

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	962			P_
7440-67-7	Zirconium	10.4	U		P_

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_14G8_____

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-3

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-3____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	11900		*	P
7440-36-0	Antimony_	5.7	U	N	P
7440-38-2	Arsenic__	6.9		N	F
7440-39-3	Barium___	87.9			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium__	0.30	U		P
7440-70-2	Calcium__	10100			P
7440-47-3	Chromium_	18.1		*	P
7440-48-4	Cobalt___	12.0			P
7440-50-8	Copper___	18.5		*	P
7439-89-6	Iron_____	23600			P
7439-92-1	Lead_____	9.8			F
7439-95-4	Magnesium	6710		*	P
7439-96-5	Manganese	423		*	P
7439-97-6	Mercury__	0.10	U	*	CV
7440-02-0	Nickel___	23.8		*	P
7440-09-7	Potassium	2050		*	P
7782-49-2	Selenium_	4.5	U	N	F
7440-22-4	Silver___	1.2			P
7440-23-5	Sodium___	255	B		P
7440-28-0	Thallium_	3.3	U	*	F
7440-62-2	Vanadium_	46.3			P
7440-66-6	Zinc_____	53.2			P
7439-98-7_	Molybdenu	1.4	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1469_____

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00006

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-3

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-3____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.8

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1310			P_
7440-67-7	Zirconium	19.2			P_

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1489

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00007

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-4

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-4____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6070		*	P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	3.9		N	F
7440-39-3	Barium	96.5			P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	7840			P
7440-47-3	Chromium	7.1		*	P
7440-48-4	Cobalt	15.4			P
7440-50-8	Copper	13.6		*	P
7439-89-6	Iron	29300			P
7439-92-1	Lead	4.9			F
7439-95-4	Magnesium	4970		*	P
7439-96-5	Manganese	392		*	P
7439-97-6	Mercury	0.10	U	*	CV
7440-02-0	Nickel	13.2		*	P
7440-09-7	Potassium	918		*	P
7782-49-2	Selenium	4.5	W	N	F
7440-22-4	Silver	1.6			P
7440-23-5	Sodium	381	B		P
7440-28-0	Thallium	3.4	U	*	F
7440-62-2	Vanadium	80.5			P
7440-66-6	Zinc	56.8			P
7439-98-7	Molybdenu	1.4	U		P

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B57

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-4

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-4____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	2720			P_
7440-67-7	Zirconium	29.5			P_

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1B57

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-5

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2683__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-5____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7780		*	P
7440-36-0	Antimony_	5.7	U	N	P
7440-38-2	Arsenic__	4.6		N	F
7440-39-3	Barium___	72.8			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium__	0.31	U		P
7440-70-2	Calcium__	8900			P
7440-47-3	Chromium_	12.4		*	P
7440-48-4	Cobalt___	16.0			P
7440-50-8	Copper___	14.9		*	P
7439-89-6	Iron_____	30800			P
7439-92-1	Lead_____	6.0			F
7439-95-4	Magnesium	6060		*	P
7439-96-5	Manganese	455		*	P
7439-97-6	Mercury__	0.10	U	*	CV
7440-02-0	Nickel___	16.6		*	P
7440-09-7	Potassium	1330		*	P
7782-49-2	Selenium_	4.5	U	N	F
7440-22-4	Silver___	1.2			P
7440-23-5	Sodium___	304	B		P
7440-28-0	Thallium_	3.4	U	*	F
7440-62-2	Vanadium_	82.3			P
7440-66-6	Zinc_____	60.8			P
7439-98-7_	Molybdenu	1.4	U		P

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B58

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-5

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-5____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	2780			P_
7440-67-7	Zirconium	27.2			P_

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1B58

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00011

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-6

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-6____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _93.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6330		*	P
7440-36-0	Antimony	6.0	U	N	P
7440-38-2	Arsenic	4.7		N	F
7440-39-3	Barium	68.7			P
7440-41-7	Beryllium	0.75			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	5740			P
7440-47-3	Chromium	11.6		*	P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	9.0		*	P
7439-89-6	Iron	15200			P
7439-92-1	Lead	4.2			F
7439-95-4	Magnesium	4210		*	P
7439-96-5	Manganese	262		*	P
7439-97-6	Mercury	0.11	U	*	CV
7440-02-0	Nickel	13.0		*	P
7440-09-7	Potassium	1140		*	P
7782-49-2	Selenium	~~21.2~~ 9.7	U	N	F
7440-22-4	Silver	1.1			P
7440-23-5	Sodium	149	B		P
7440-28-0	Thallium	3.5	U	*	F
7440-62-2	Vanadium	31.4			P
7440-66-6	Zinc	34.7			P
7439-98-7	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

B0_1B59

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00012

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-6

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-6____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _93.3

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	864			P_
7440-67-7	Zirconium	10.7	U		P_

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B59

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-7

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-7____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7890		*	P
7440-36-0	Antimony	6.0	U	N	P
7440-38-2	Arsenic	3.6		N	F
7440-39-3	Barium	60.0			P
7440-41-7	Beryllium	0.97			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	8300			P
7440-47-3	Chromium	16.2		*	P
7440-48-4	Cobalt	10.3			P
7440-50-8	Copper	9.5		*	P
7439-89-6	Iron	22100			P
7439-92-1	Lead	4.6			F
7439-95-4	Magnesium	5000		*	P
7439-96-5	Manganese	353		*	P
7439-97-6	Mercury	0.11	U	*	CV
7440-02-0	Nickel	14.3		*	P
7440-09-7	Potassium	1200		*	P
7782-49-2	Selenium	4.8 ~~29.3~~	a	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	194	B		P
7440-28-0	Thallium	3.6	U	*	F
7440-62-2	Vanadium	52.9			P
7440-66-6	Zinc	42.4			P
7439-98-7	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

B0_1B60

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-7

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-7____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1260			P_
7440-67-7	Zirconium	11.3			P_

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1B60

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-8

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2683__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-8____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6490		*	P
7440-36-0	Antimony	6.1	U	N	P
7440-38-2	Arsenic	3.7		N	F
7440-39-3	Barium	65.2			P
7440-41-7	Beryllium	0.77			P
7440-43-9	Cadmium	0.33	U		P
7440-70-2	Calcium	6680			P
7440-47-3	Chromium	11.8		*	P
7440-48-4	Cobalt	8.3			P
7440-50-8	Copper	10.1		*	P
7439-89-6	Iron	16200			P
7439-92-1	Lead	4.1			F
7439-95-4	Magnesium	4130		*	P
7439-96-5	Manganese	292		*	P
7439-97-6	Mercury	0.11	U	*	CV
7440-02-0	Nickel	12.3		*	P
7440-09-7	Potassium	1170		*	P
7782-49-2	Selenium	4.8 ~~15.8~~	U	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	163	B		P
7440-28-0	Thallium	3.6	U	*	F
7440-62-2	Vanadium	35.4			P
7440-66-6	Zinc	34.0			P
7439-98-7	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1B61

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-8

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-8____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	911			P_
7440-67-7	Zirconium	11.0	U		P_

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B61

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-9

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2603__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-9____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	13100		*	P
7440-36-0	Antimony_	5.8	U	N	P
7440-38-2	Arsenic__	6.3		N	F
7440-39-3	Barium___	100			P
7440-41-7	Beryllium	1.5			P
7440-43-9	Cadmium__	0.31	U		P
7440-70-2	Calcium__	12100			P
7440-47-3	Chromium_	17.3		*	P
7440-48-4	Cobalt___	14.5			P
7440-50-8	Copper___	19.3		*	P
7439-89-6	Iron_____	27500			P
7439-92-1	Lead_____	8.9			F
7439-95-4	Magnesium	7470		*	P
7439-96-5	Manganese	481		*	P
7439-97-6	Mercury__	0.10	U	*	CV
7440-02-0	Nickel___	22.8		*	P
7440-09-7	Potassium	2190		*	P
7782-49-2	Selenium_	4.6	U	N	F
7440-22-4	Silver___	1.0			P
7440-23-5	Sodium___	349	B		P
7440-28-0	Thallium_	3.4	U	*	F
7440-62-2	Vanadium_	59.3			P
7440-66-6	Zinc_____	60.1			P
7439-98-7_	Molybdenu	1.5	U		P

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B62

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-9

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-9____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1720			P_
7440-67-7	Zirconium	26.0			P_

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B62

FORM I - IN

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-10

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-10___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8000		*	P
7440-36-0	Antimony	5.7	U	N	P
7440-38-2	Arsenic	3.7		N	F
7440-39-3	Barium	78.4			P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	9060			P
7440-47-3	Chromium	10.8		*	P
7440-48-4	Cobalt	17.8			P
7440-50-8	Copper	15.0		*	P
7439-89-6	Iron	33700			P
7439-92-1	Lead	8.2			F
7439-95-4	Magnesium	6290		*	P
7439-96-5	Manganese	467		*	P
7439-97-6	Mercury	0.10	U	*	CV
7440-02-0	Nickel	16.3		*	P
7440-09-7	Potassium	1330		*	P
7782-49-2	Selenium	4.5	U	N	F
7440-22-4	Silver	1.7			P
7440-23-5	Sodium	385	B		P
7440-28-0	Thallium	3.4	U	*	F
7440-62-2	Vanadium	94.9			P
7440-66-6	Zinc	66.4			P
7439-98-7	Molybdenu	1.4	U		P

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

BO_1B63

FORM I - IN

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-10

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-10___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	3180			P_
7440-67-7	Zirconium	31.7			P_

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B63

FORM I - IN

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00021

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-11

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-11___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22.8		*	P
7440-36-0	Antimony	5.6	U	N	P
7440-38-2	Arsenic	2.2	U	N	F
7440-39-3	Barium	4.1	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	189	B		P
7440-47-3	Chromium	0.70	U	*	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.8	U	*	P
7439-89-6	Iron	58.9			P
7439-92-1	Lead	1.1	U		F
7439-95-4	Magnesium	249	U	*	P
7439-96-5	Manganese	0.90	B	*	P
7439-97-6	Mercury	0.10	U	*	CV
7440-02-0	Nickel	3.2	U	*	P
7440-09-7	Potassium	130	U	*	P
7782-49-2	Selenium	4.4	U	N	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	98.7	U		P
7440-28-0	Thallium	3.3	U	*	F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	5.0	U		P
7439-98-7	Molybdenu	1.4	U		P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

BO_14J9

FORM I - IN

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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-11

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-11___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1.0	U		P_
7440-67-7	Zirconium	10.0	U		P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
BO_14J9

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00023

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VALIDATION SUMMARY

OSM INORGANIC DATA ASSESSMENT

DATE 2/9/92

REVIEWED BY JA Lerch

LABORATORY S3

CASE # SITEW

SDG # 26663

SAMPLES/MATRIX

B01467	~~B015859~~	B01863
B01468	B01859	B01499
B01469	B01860	all soil
B01857	B01861	
B01858	B01862	

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CN
1. Calibrations (Form II)	O	O	O	
2. Blanks (III)	O	X	O	
3. ICS (IV)	X			
4. Matrix Spike (V)	M	X	O	
5. Duplicate Analysis (VI)	M	O	X	
6. LCS (VII)	O	O		
7. Serial Dilution (IX)	O			
8. GFAA		X		
9. Holding Times (XIV)	O	O	O	
10. Other QC	See attachment			

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 ASSESSSMENT: Sb results unusable due to very low spike recovery; all other results acceptable w/ attached qualifiers

NOTES: CN not requested; evaluation includes non-CLP analytes (Mo, Ti, Zr)

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

INORGANIC QC - Calibrations

Name JA Lerch Date 2/9/92

COMMENTS: - all ICV + CCV recoveries for TAL within limits
- Mo, Ti, Zr recoveries acceptable (non-CLP analytes)
- Hg correlation coefficient ok
- analytical run sequence reqs met

ACTION: none

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

INORGANIC QC - Blanks

Name JA Lerch Date 2/9/92

COMMENTS: Pb detected in blanks at levels < CRDL

ACTION: qualify associated results as per OSM guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
all	Pb	acceptable			

INORGANIC QC - ICS

Name JALerch Date 2/9/92

COMMENTS: -all ICS solution recoveries within limits for TAL; non-CLP analytes (Mo, Ti, Zr) - recoveries low for Ti, ok for others

ACTION: qualify associated results as per OSM guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
all	Ti	J			

INORGANIC QC - Matrix Spike

Name JA Lerch Date 2/9/92

COMMENTS: 2663-15 – Sb recovery very low; Se, recovery low, As recovery high; all other spike recoveries within applicable limits for TAL – Ti recovery high

ACTION: qualify associated results as per OSM guidelines

sample #	constituent	value/qual
all	Sb	R
	As	J ~~UJ~~
	Se	UJ
	Ti	J
– with the following exception		
2663-11	Sb	R
	As	UJ
	Se	UJ
	Ti	UJ

sample #	constituent	value/qual

INORGANIC QC - Duplicate Analysis

Name JA Lerch Date 2/9/92

COMMENTS: 26663-1D — Al, Cr, Cu, Mg, Mn, Hg, Ni, K, duplicate RPDs high; all other dup results within applicable limits for TAL and non CLP analytes

ACTION: qualify associated results as per OSM guidelines

sample #	constituent	value/qual
all	Al	J
	Cr	J
	Cu	J
	Mg	J
	Mn	J
	Hg	UJ
	Ni	J
	K	J
— with the following exceptions		
26663-1	Hg	J
26663-11	Cr	UJ
	Cu	↓
	Mg	↓
	Ni	↓
	K	↓

sample #	constituent	value/qual

INORGANIC QC - LCS

Name JA Lerch Date 7/9/92

COMMENTS: aqueous LCS results within applicable control limits; solid LCS not performed (S^3 unable to obtain solid LCS) - effect on sample results minimal

ACTION: S^3 has been contacted to obtain acceptable solid LCS

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

INORGANIC QC - Serial Dilution

Name JA Lerch Date 2/9/92

COMMENTS: 26663-1L — all dilution results within applicable control limits for TAL and non-CLP analytes

ACTION: none

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

INORGANIC QC - Holding Times

Name JAlecch Date 2/9/92

COMMENTS: - all ICP + GFAA holding times met
- all Hg holding times met

ACTION: none

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

INORGANIC QC - GFAA

Name JA Lerch Date 2/9/92

COMMENTS: GFAA analytical sequence reqs met
- no MSA required or performed
- analytical spikes low for Se, Tl, Pb on several samples (see below)

ACTION: qualify associated results as per BSM guidelines

sample #	constituent	value/qual
26663-1	Tl	UJ
26663-2	Se	UJ
	Tl	UJ
	Pb	J
26663-3	Se	UJ
	Tl	UJ
	Pb	J
26663-4	Tl	UJ
	Pb	J
2663-5	Se	UJ
	Tl	UJ
	Pb	J
26663-6	Se	UJ
	Tl	UJ
	Pb	J
26663-7	Se	UJ
	Tl	UJ
	Pb	J
26663-8	Se	UJ
	Tl	UJ
	Pb	J
26663-9	Se	UJ
	Tl	UJ
	~~Pb~~	
26663-10	Se	UJ
	Tl	UJ
	Pb	J
26663-11	Se	UJ
	Tl	UJ

INORGANIC QC - other

Name JA Lerch Date 2/9/92

COMMENTS: WHC sample #s handwritten on Form I's above EPA sample #; also contained under "comments:"

ACTION: none

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

WHC ID
B014G7

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-1

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-1____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7940	J	*	P_
7440-36-0	Antimony_	5.9	UJ	R N	P_
7440-38-2	Arsenic__	3.2	J	N	F_
7440-39-3	Barium___	87.7	_		P_
7440-41-7	Beryllium	1.3	_		P_
7440-43-9	Cadmium__	0.31	U		P_
7440-70-2	Calcium__	10100	_		P_
7440-47-3	Chromium_	10.7	J	*	P_
7440-48-4	Cobalt___	13.6	_		P_
7440-50-8	Copper___	18.0	J	*	P_
7439-89-6	Iron_____	27600	_		P_
7439-92-1	Lead_____	6.8	_		F_
7439-95-4	Magnesium	5640	J	*	P_
7439-96-5	Manganese	397	J	*	P_
7439-97-6	Mercury__	0.83	J	*	CV
7440-02-0	Nickel___	13.8	J	*	P_
7440-09-7	Potassium	1510	J	*	P_
7782-49-2	Selenium_	4.6	UJ	N	F_
7440-22-4	Silver___	1.0	U		P_
7440-23-5	Sodium___	291	B		P_
7440-28-0	Thallium_	3.5	UJ	*	F_
7440-62-2	Vanadium_	61.2	_		P_
7440-66-6	Zinc_____	54.7	_		P_
7439-98-7_	Molybdenu	1.5	U		P_

2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G7

FORM I - IN

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WHC ID
B014G7

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-1

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-1____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1860	J		P_
7440-67-7	Zirconium	24.9			P_

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G7

FORM I - IN

7/88

00003

WHC ID
B01468

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-2

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-2____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _96.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7420	J	*__	P_
7440-36-0	Antimony_	5.8	~~U~~ R	N__	P_
7440-38-2	Arsenic__	4.7	J	N__	F_
7440-39-3	Barium___	69.5	_		P_
7440-41-7	Beryllium	0.83	_		P_
7440-43-9	Cadmium__	0.31	U		P_
7440-70-2	Calcium__	6330	_		P_
7440-47-3	Chromium_	12.3	J	*__	P_
7440-48-4	Cobalt___	7.9	_		P_
7440-50-8	Copper___	9.3	J	*__	P_
7439-89-6	Iron____	16600	~~J~~		P_
7439-92-1	Lead____	4.8	J		F_
7439-95-4	Magnesium	4150	J	*__	P_
7439-96-5	Manganese	300	J	*__	P_
7439-97-6	Mercury__	0.10	UJ	*__	CV
7440-02-0	Nickel___	11.6	J	*__	P_
7440-09-7	Potassium	1270	J	*__	P_
7782-49-2	Selenium_	4.6	UJ	N__	F_
7440-22-4	Silver___	1.0	U		P_
7440-23-5	Sodium___	196	B		P_
7440-28-0	Thallium_	3.4	UJ	*__	F_
7440-62-2	Vanadium_	37.0	_		P_
7440-66-6	Zinc____	33.3	_		P_
7439-98-7_	Molybdenu	1.5	U		P_

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1468

FORM I - IN

7/88

00004

WHC ID
B014G8

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-2

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-2____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _96.3

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	962	J		P_
7440-67-7	Zirconium	10.4	U		P_

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G8

FORM I - IN

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WHC ID
B014G9

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-3

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-3____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	11900	J	*	P_
7440-36-0	Antimony_	5.7	UJ	N	P_
7440-38-2	Arsenic__	6.9	J	N	F_
7440-39-3	Barium___	87.9	_		P_
7440-41-7	Beryllium	1.2	_		P_
7440-43-9	Cadmium__	0.30	U		P_
7440-70-2	Calcium__	10100	_		P_
7440-47-3	Chromium_	18.1	J	*	P_
7440-48-4	Cobalt___	12.0	_		P_
7440-50-8	Copper___	18.5	J	*	P_
7439-89-6	Iron_____	23600	_		P_
7439-92-1	Lead_____	9.8	J		F_
7439-95-4	Magnesium	6710	J	*	P_
7439-96-5	Manganese	423	J	*	P_
7439-97-6	Mercury__	0.10	UJ	*	CV
7440-02-0	Nickel___	23.8	J	*	P_
7440-09-7	Potassium	2050	J	*	P_
7782-49-2	Selenium_	4.5	UJ	N	F_
7440-22-4	Silver___	1.2	_		P_
7440-23-5	Sodium___	255	B		P_
7440-28-0	Thallium_	3.3	UJ	*	F_
7440-62-2	Vanadium_	46.3	_		P_
7440-66-6	Zinc_____	53.2	_		P_
7439-98-7_	Molybdenu	1.4	U		P_

2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G9

FORM I - IN

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WHC ID
B014G9

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-3

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-3____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.8

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1310	J		P_
7440-67-7	Zirconium	19.2			P_

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_14G9

FORM I - IN

7/88

00007

WHC ID
B01B57

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-4

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-4____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	6070	J	*__	P_
7440-36-0	Antimony_	5.7	UJ	N__	P_
7440-38-2	Arsenic__	3.9	J	N__	F_
7440-39-3	Barium___	96.5	_	____	P_
7440-41-7	Beryllium	1.2	_	____	P_
7440-43-9	Cadmium__	0.31	U	____	P_
7440-70-2	Calcium__	7840	_	____	P_
7440-47-3	Chromium_	7.1	J	*__	P_
7440-48-4	Cobalt___	15.4	_	____	P_
7440-50-8	Copper___	13.6	J	*__	P_
7439-89-6	Iron_____	29300	_	____	P_
7439-92-1	Lead_____	4.9	J	____	F_
7439-95-4	Magnesium	4970	J	*__	P_
7439-96-5	Manganese	392	J	*__	P_
7439-97-6	Mercury__	0.10	UJ	*__	CV
7440-02-0	Nickel___	13.2	J	*__	P_
7440-09-7	Potassium	918	J	*__	P_
7782-49-2	Selenium_	4.5	UJ	N__	F_
7440-22-4	Silver___	1.6	_	____	P_
7440-23-5	Sodium___	381	B	____	P_
7440-28-0	Thallium_	3.4	UJ	*__	F_
7440-62-2	Vanadium_	80.5	_	____	P_
7440-66-6	Zinc_____	56.8	_	____	P_
7439-98-7_	Molybdenu	1.4	U	____	P_

2/9/92

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B57

FORM I - IN

7/88

00003

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

DHC ID
B01B57

EPA SAMPLE NO.

2663-4

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITEW SAS No.: SDG No.: 2663

Matrix (soil/water): SOIL Lab Sample ID: 2663-4

Level (low/med): LOW Date Received: 10/29/91

% Solids: 98.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium				NR
7440-32-6	Titanium	2720	J		P
7440-67-7	Zirconium	29.5			P

JJ 2/9/92

Color Before: GREY Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:
B0_1B57

FORM I - IN

7/88

00009

WHC ID
B01B58

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-5

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2683__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-5____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7780	J	*	P_
7440-36-0	Antimony_	5.7	UJ	N	P_
7440-38-2	Arsenic__	4.6	J	N	F_
7440-39-3	Barium___	72.8	_		P_
7440-41-7	Beryllium	1.3	_		P_
7440-43-9	Cadmium__	0.31	U		P_
7440-70-2	Calcium__	8900	_		P_
7440-47-3	Chromium_	12.4	J	*	P_
7440-48-4	Cobalt___	16.0	_		P_
7440-50-8	Copper___	14.9	J	*	P_
7439-89-6	Iron_____	30800	_		P_
7439-92-1	Lead_____	6.0	J		F_
7439-95-4	Magnesium	6060	J	*	P_
7439-96-5	Manganese	455	J	*	P_
7439-97-6	Mercury__	0.10	UJ	*	CV
7440-02-0	Nickel___	16.6	J	*	P_
7440-09-7	Potassium	1330	J	*	P_
7782-49-2	Selenium_	4.5	UJ	N	F_
7440-22-4	Silver___	1.2	_		P_
7440-23-5	Sodium___	304	B		P_
7440-28-0	Thallium_	3.4	UJ	*	F_
7440-62-2	Vanadium_	82.3	_		P_
7440-66-6	Zinc_____	60.8	_		P_
7439-98-7_	Molybdenu	1.4	U		P_

JJ 2/9/92

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B58

FORM I - IN

7/88

WHC ID
B01B58

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-5

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITEW SAS No.: SDG No.: 2663

Matrix (soil/water): SOIL Lab Sample ID: 2663-5

Level (low/med): LOW Date Received: 10/29/91

% Solids: 97.4

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium				NR
7440-32-6	Titanium	2780	J		P
7440-67-7	Zirconium	27.2			P

2/9/92

Color Before: GREY Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:
BO_1B58

FORM I - IN

WHC ID
B01B59

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-6

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-6____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _93.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	6330	J	*	P
7440-36-0	Antimony_	6.0	UR	N	P
7440-38-2	Arsenic__	4.7	J	N	F
7440-39-3	Barium___	68.7			P
7440-41-7	Beryllium	0.75			P
7440-43-9	Cadmium__	0.32	U		P
7440-70-2	Calcium__	5740			P
7440-47-3	Chromium_	11.6	J	*	P
7440-48-4	Cobalt___	7.6			P
7440-50-8	Copper___	9.0	J	*	P
7439-89-6	Iron_____	15200			P
7439-92-1	Lead_____	4.2	J		F
7439-95-4	Magnesium	4210	J	*	P
7439-96-5	Manganese	262	J	*	P
7439-97-6	Mercury__	0.11	UJ	*	CV
7440-02-0	Nickel___	13.0	J	*	P
7440-09-7	Potassium	1140	J	*	P
7782-49-2	Selenium_	9.7 ~~21.2~~	UJ	N	F
7440-22-4	Silver___	1.1			P
7440-23-5	Sodium___	149	B		P
7440-28-0	Thallium_	3.5	UJ	*	F
7440-62-2	Vanadium_	31.4			P
7440-66-6	Zinc_____	34.7			P
7439-98-7_	Molybdenu	1.5	U		P

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1859

FORM I - IN

7/88

WHC ID
B01B59

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-6

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-6____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _93.3

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium				NR
7440-32-6	Titanium	864	J		P
7440-67-7	Zirconium	10.7	U		P

2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B59

FORM I - IN

7/88

00013

WHC ID
B01B60

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-7

Lab Name: S_CUBED Contract: 32359-04

Lab Code: S3 Case No.: SITEW SAS No.: SDG No.: 2663

Matrix (soil/water): SOIL Lab Sample ID: 2663-7

Level (low/med): LOW Date Received: 10/29/91

% Solids: 92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7890	J	*	P
7440-36-0	Antimony	6.0	UR	N	P
7440-38-2	Arsenic	3.6	J	N	F
7440-39-3	Barium	60.0			P
7440-41-7	Beryllium	0.97			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	8300			P
7440-47-3	Chromium	16.2	J	*	P
7440-48-4	Cobalt	10.3			P
7440-50-8	Copper	9.5	J	*	P
7439-89-6	Iron	22100			P
7439-92-1	Lead	4.6	J		F
7439-95-4	Magnesium	5000	J	*	P
7439-96-5	Manganese	353	J	*	P
7439-97-6	Mercury	0.11	UJ	*	CV
7440-02-0	Nickel	14.3	J	*	P
7440-09-7	Potassium	1200	J	*	P
7782-49-2	Selenium	4.1 ~~29.3~~	UJ	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	194	B		P
7440-28-0	Thallium	3.6	UJ	*	F
7440-62-2	Vanadium	52.9			P
7440-66-6	Zinc	42.4			P
7439-98-7	Molybdenu	1.5	U		P

JJ 2/9/92

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:
B0_1B60

FORM I - IN

7/88

WHC ID
B01B60

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-7

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-7____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__	_____	_	_____	NR
7440-32-6	Titanium_	_____1260	J	_____	P_
7440-67-7	Zirconium	_____11.3	_	_____	P_

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B60

FORM I - IN

7/88

00065

WHC ID
B01B61

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-8

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2683__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-8____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6490	J	*	P
7440-36-0	Antimony	6.1	UJ	N	P
7440-38-2	Arsenic	3.7	J	N	F
7440-39-3	Barium	65.2			P
7440-41-7	Beryllium	0.77			P
7440-43-9	Cadmium	0.33	U		P
7440-70-2	Calcium	6680			P
7440-47-3	Chromium	11.8	J	*	P
7440-48-4	Cobalt	8.3			P
7440-50-8	Copper	10.1	J	*	P
7439-89-6	Iron	16200			P
7439-92-1	Lead	4.1	J		F
7439-95-4	Magnesium	4130	J	*	P
7439-96-5	Manganese	292	J	*	P
7439-97-6	Mercury	0.11	UJ	*	CV
7440-02-0	Nickel	12.3	J	*	P
7440-09-7	Potassium	1170	J	*	P
7782-49-2	Selenium	4.8 ~~15.8~~	UJ	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	163	B		P
7440-28-0	Thallium	3.6	UJ	*	F
7440-62-2	Vanadium	35.4			P
7440-66-6	Zinc	34.0			P
7439-98-7	Molybdenu	1.5	U		P

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B61

FORM I - IN

7/88

WHC ID
B01B61

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
2663-8

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-8____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _91.2

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium				NR
7440-32-6	Titanium	911	J		P
7440-67-7	Zirconium	11.0	U		P

2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B61

FORM I - IN

7/88

WHC ID
B01B62

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-9

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-9____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13100	J	*	P
7440-36-0	Antimony	5.8	UR	N	P
7440-38-2	Arsenic	6.3	J	N	F
7440-39-3	Barium	100			P
7440-41-7	Beryllium	1.5			P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	12100			P
7440-47-3	Chromium	17.3	J	*	P
7440-48-4	Cobalt	14.5			P
7440-50-8	Copper	19.3	J	*	P
7439-89-6	Iron	27500			P
7439-92-1	Lead	8.9			F
7439-95-4	Magnesium	7470	J	*	P
7439-96-5	Manganese	481	J	*	P
7439-97-6	Mercury	0.10	UJ	*	CV
7440-02-0	Nickel	22.8	J	*	P
7440-09-7	Potassium	2190	J	*	P
7782-49-2	Selenium	4.6	UJ	N	F
7440-22-4	Silver	1.0			P
7440-23-5	Sodium	349	B		P
7440-28-0	Thallium	3.4	UJ	*	F
7440-62-2	Vanadium	59.3			P
7440-66-6	Zinc	60.1			P
7439-98-7	Molybdenu	1.5	U		P

JJ 2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B62

FORM I - IN

7/88

WHC ID
B01B62

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-9

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-9____

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _95.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	1720	J		P_
7440-67-7	Zirconium	26.0			P_

2/9/92

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B62

FORM I - IN

7/88

WHC ID
B01B63

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-10

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-10___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	8000	J	*	P
7440-36-0	Antimony_	5.7	~~UJ~~ R	N	P
7440-38-2	Arsenic__	3.7	J	N	F
7440-39-3	Barium___	78.4			P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium__	0.31	U		P
7440-70-2	Calcium__	9060			P
7440-47-3	Chromium_	10.8	J	*	P
7440-48-4	Cobalt___	17.8			P
7440-50-8	Copper___	15.0	J	*	P
7439-89-6	Iron_____	33700			P
7439-92-1	Lead_____	8.2	J		F
7439-95-4	Magnesium	6290	J	*	P
7439-96-5	Manganese	467	J	*	P
7439-97-6	Mercury__	0.10	UJ	*	CV
7440-02-0	Nickel___	16.3	J	*	P
7440-09-7	Potassium	1330	J	*	P
7782-49-2	Selenium_	4.5	UJ	N	F
7440-22-4	Silver___	1.7			P
7440-23-5	Sodium___	385	B		P
7440-28-0	Thallium_	3.4	UJ	*	F
7440-62-2	Vanadium_	94.9			P
7440-66-6	Zinc_____	66.4			P
7439-98-7_	Molybdenu	1.4	U		P

JJ 2/9/92

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
B0_1B63

FORM I - IN

7/88

WHC ID
B01863

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-10

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-10___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: _97.9

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium__				NR
7440-32-6	Titanium_	3180	J		P_
7440-67-7	Zirconium	31.7			P_

2/9/92

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
BO_1B63

FORM I - IN

7/88

00021

WHC ID
B014J9

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-11

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-11___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	22.8	J	*__	P_
7440-36-0	Antimony_	5.6	~~UN~~ R	N___	P_
7440-38-2	Arsenic__	2.2	UJ	N___	F_
7440-39-3	Barium___	4.1	U	_____	P_
7440-41-7	Beryllium	0.20	U	_____	P_
7440-43-9	Cadmium__	0.30	U	_____	P_
7440-70-2	Calcium__	189	B	_____	P_
7440-47-3	Chromium_	0.70	UJ	*___	P_
7440-48-4	Cobalt___	1.6	U	_____	P_
7440-50-8	Copper___	1.8	UJ	*___	P_
7439-89-6	Iron____	58.9	_	_____	P_
7439-92-1	Lead____	1.1	U	_____	F_
7439-95-4	Magnesium	249	UJ	*___	P_
7439-96-5	Manganese	0.90	~~U~~ J	*___	P_
7439-97-6	Mercury__	0.10	UJ	*___	CV
7440-02-0	Nickel___	3.2	UJ	*___	P_
7440-09-7	Potassium	130	UJ	*___	P_
7782-49-2	Selenium_	4.4	UJ	N___	F_
7440-22-4	Silver___	1.0	U	_____	P_
7440-23-5	Sodium___	98.7	U	_____	P_
7440-28-0	Thallium_	3.3	UJ	*___	F_
7440-62-2	Vanadium_	2.0	U	_____	P_
7440-66-6	Zinc____	5.0	U	_____	P_
7439-98-7_	Molybdenu	1.4	U	_____	P_

2/9/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
BO_14J9_____

FORM I - IN

7/88

WHC ID
B01499

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

2663-11

Lab Name: S_CUBED_____ Contract: 32359-04__

Lab Code: S3____ Case No.: SITEW SAS No.: _____ SDG No.: 2663__

Matrix (soil/water): SOIL_ Lab Sample ID: 2663-11___

Level (low/med): LOW__ Date Received: 10/29/91

% Solids: 100.0

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

CAS No.	Analyte	Concentration	C	Q	M
7439-93-2	Lithium				NR
7440-32-6	Titanium	1.0	U		P
7440-67-7	Zirconium	10.0	U		P

JJ 2/19/92

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
B0_14J9

FORM I - IN

7/88

00022

OSM RCRA DATA ASSESSMENT

DATE 2/10/92 mab

REVIEWED BY Mark A. Beck

LABORATORY Maxwell-S-Cubed

CASE # Site Wide Soil

SDG # 2663

SAMPLES/MATRIX B01467 B01468 B01469 B01B57 B01B58 B01B59 B01B60 B01B61 B01B62 B01B63 B01459

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	silica by 370.1 ammonia by 350.3	alkalinity by 310.1	anions by 300.0
1. Holding Times		~~A~~ O mab.	O	M
2. Matrix Spikes		O	O	O
3. Duplicates		O	O	O
4. Blanks		O	O	O
5. Calibration/LCS		O	O	O
6. Other		O	O	O
7.				
8.				
9.				
10.				

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

OVERALL ASSESSSMENT: The data are acceptable with the attached qualifiers.

NOTES: "Anions" includes: fluoride, chloride, nitrite, nitrate, phosphate, sulfate.

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

The correspondence between WHC sample numbers and S-Cubed sample numbers can be found in the enclosed "sample summary"

RCRA QC

Name Mark A. Beck Date 2/10/92 mab

QC Check: Holding Times

COMMENTS: Holding time requirements were met for silica, ammonia, alkalinity, fluoride, chloride and sulfate. Holding times were missed for nitrite, nitrate, and phosphate.

ACTION: Qualify all samples estimated for nitrite, nitrate and phosphate.

sample #	constituent	value/qual	sample #	constituent	value/qual
all	nitrite (NO_2^-)	UJ			
all except B01479	nitrate (NO_3^-)	J UJ			
all	phosphate (HPO_4^-)	UJ or J			

RCRA QC

Name Mark A. Beck Date 2/10/92 mab

QC Check: Matrix Spikes

COMMENTS: All analytes had appropriate matrix spikes performed. All matrix spikes had recoveries within control limits.

ACTION: none - none needed

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

RCRA QC

Name Mark A. Beck Date 2/10/92 mab.

QC Check: Duplicates

COMMENTS: All duplicate analyses were within control limits. Appropriate duplicate analyses were run for all methods.

ACTION: none - none needed.

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

RCRA QC

Name Mark A. Beck Date 2/10/92 MAB

QC Check: Blanks

COMMENTS: appropriate blanks were run for each method. all blanks were free from contamination above the IDL.

ACTION: none - none needed.

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

RCRA QC

Name Mark A. Beck Date 2/10/92 mas.

QC Check: Calibrations / LCS

COMMENTS: All methods were calibrated appropriately, and all methods had acceptable ICV, CCV and LCS recoveries.

ACTION: none - none needed

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

RCRA QC

Name Mark A. Beck Date 2/10/92 MAB

QC Check: other

COMMENTS: none - none needed

ACTION: none - none needed

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

SAMPLE SUMMARY

S-Cubed Reference No. 32359-04, SDG No. 2663, Project Name: Site Wide Soil

Sample ID	S-Cubed Sample No	Date Received	Sample Type	Analysis									
				A	B	C	D	E	F	G	H	I	J
BO14G7	2663-1	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14G8	2663-2	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14G9	2663-3	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B57	2663-4	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B58	2663-5	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B59	2663-6	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B60	2663-7	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B61	2663-8	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B62	2663-9	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO1B63	2663-10	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1
BO14J9	2663-11	10/29/91	SOIL	1	1	1	1	1	1	1	1	1	1

Analysis Key:

A=Ti
B=Zr
C=ICPCLP-M
D=FURNCLP
E=HGCLP
F=ANIONS
G=N-NH3
H=ALK
I=Si
J=Mo

NOV 1991
RECEIVED
OSM DMO

SILICA ANALYSIS

LAB:	S-CUBED	DATA REVIEWER:	LN 11/12/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIDE SOIL	CHARGE NO:	32359-04
LOT:	2663	DATE RECEIVED:	10/29/91
FILE:	SI1029	DATE PREP:	11/06/91
DISK:	SI1023	DATE ANALYZED:	11/06/91
METHOD:	370.1	MATRIX:	SOIL
RESULTS:	UNIT AS MG/KG		

LAB ID	CONCENTRATION
2663-1	62.79
2663-2	59.94
2663-3	53.83
2663-4	30.11
2663-5	42.61
2663-6	34.35
2663-7	36.87
2663-8	33.72
2663-9	22.74
2663-10	25.93
2663-11	< 5 **

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.045 (Leaching Volume)}}{\text{0.009 kg (Sample Weight)}}$$

2/10/92
MOB

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AMMONIA ANALYSIS

LABORATORY: S-CUBED
CLIENT:
CASE:
LOT #:
FILE#:
DISK:
METHOD NO. 350.3

DATA REVIEWER: ALN 11/12/91
PROJECT REVIEWER:
CHARGE #: 32359-04
DATE RECEIVED: 10/29/91
DATE PREP: 11/01/91
DATE ANALYZED: 11/01/91
MATRIX: SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	CONCENTRATION
2663 -1	8.70
2663 -2	1.59
2663 -3	2.25
2663 -4	< 0.15
2663 -5	< 0.15
2663 -6	1.36
2663 -7	0.70
2663 -8	15.7
2663 -9	11.6
2663 -10	5.57
2663 -11	< 0.15 **

COMMENTS:

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.05 L (Leaching Volume)}}{\text{0.01 kg (Sample Weight)}}$$

2/10/92 mas

00001

ALKALINITY ANALYSIS

LAB:	S-CUBED	DATA REVIEWER:	uw 11/13/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIDE SOIL	CHARGE #:	32359-04
LOT #:	2663	DATE RECIEVED:	10/29/91
FILE #:	ALK1029	DATE PREP:	11/06/91
DISK #:	ALK1016	DATE ANALYZED:	11/06/91
METHOD NO.:	EPA 310.1	MATRIX:	SOIL

RESULTS: RESULTS AS DRY WEIGHT - MG/KG

LAB ID	CONCENTRATION
2663 - 1	939
2663 - 2	536
2663 - 3	1500
2663 - 4	772
2663 - 5	951
2663 - 6	457
2663 - 7	1980
2663 - 8	675
2663 - 9	1140
2663 - 10	1010
** 2663- 11	< 5

COMMENTS:

** Extra lab blank is calculated from:

2/10/92 mcl.

$$\frac{\text{Method Detection Limit (mg/L) X 0.025 L (Leaching Volume)}}{\text{0.005 kg (Sample Weight)}}$$

ANIONS ANALYSIS

LABORATORY:	S-CUBED	DATA REVIEWER:	11/12/91
CLIENT:	WHC	PROJECT REVIEWER:	
CASE:	SITE WIPE SOIL	CHARGE #:	32359-04
LOT #:	2663	DATE RECEIVED:	10/29/91
FILE#:	ANI1029	DATE PREP:	11/06/91
DISK:	ANI1110	DATE ANALYZED:	11/06/91
METHOD NO.	300.0	MATRIX:	SOIL

RESULTS: UNIT AS MG/KG DRY WEIGHT

LAB ID	F	CL	NO2	NO3	PO4	SO4
2663 -1	0.66	6.34	< 0.2 UJ	87.0 J	< 0.5 UJ	11.0
2663 -2	0.17	2.38	< 0.2	18.5	1.47 J	2.26
2663 -3	0.44	2.77	< 0.2	3.78	0.99 J	1.55
2663 -4	< 0.1	2.20	< 0.2	10.6	< 0.5 UJ	2.25
2663 -5	< 0.1	3.34	< 0.2	2.23	< 0.5 UJ	0.99
2663 -6	0.26	1.90	< 0.2	2.97	0.95 J	1.09
2663 -7	0.14	3.46	< 0.2	55.7	< 0.5 UJ	7.34
2663 -8	0.12	1.82	< 0.2	2.05	0.82 J	0.87
2663 -9	< 0.1	4.65	< 0.2	299	< 0.5 UJ	28.9
2663 -10	< 0.1	1.79	< 0.2	2.48 J	< 0.5 UJ	0.84
** 2663 -11	< 0.1	< 0.1	< 0.2 UJ	< 0.5	< 0.5 UJ	< 0.5

COMMENTS:

2/10/92 mab

** Extra lab blank is calculated from:

$$\frac{\text{Method Detection Limit (mg/L) X 0.045 L (Leaching Volume)}}{\text{0.009 kg (Sample Weight)}}$$