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PUBLIC
DOCUMENT

U.S. Army Corps of Engineers
Omaha District

Vasquez and I-70 Site
Denver, Colorado

ADMINISTRATIVE
RECORD

Draft Report for
Rapid Response
Sampling and Analysis
Residential Area

Volume III

Contract Number DACA45-98-D-0004
Delivery Order No. 5

16 February 1999

Prepared for:

U.S. ARMY CORPS. OF ENGINEERS, OMAHA DISTRICT
Fort Crook Area, Rapid Response Resident Office

Prepared by
WESTON®
MANAGERS DESIGNERS/CONSULTANTS
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ANALYTICAL REPORT

Vasquez & I-70

Lot #: D9A130168

Gerald Almquist

Roy F. Weston, Inc.

QUANTERRA INCORPORATED

Ellen La Riviere

Ellen La Riviere
Project Manager

February 12, 1999

Project Narrative

(D9A130168)

Due to the high organic content of the samples, a strong chemical reaction in the laboratory prevented completion of the ICP analysis. Insufficient sample remained to reprep the samples. The client was contacted on January 19, 1999 to request additional sample be provided. On February 4, 1999, the client indicated no additional sample was available. Therefore, no ICP metals have been reported.

With exceptions noted on the data sheets, standard analytical protocols were followed in the analyses of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within acceptable limits.

D9A 130168

CHAIN OF CUSTODY RECORD

LEGS Laboratory for Environmental and Geological Studies

University of Colorado, Boulder CO 80501-0250

PROJECT NAME NI70 PROJECT NO. EPA 0098

Field Log Book Reference No. _____

	SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	ANALYSIS	REMARKS
-001	NO-9A-1978				ICP/ICP/MS SW846 6010/6020	WESTON SPLITS
-002	NO-9A-1977					
-003	NO-9A-2096					
-004	NO-9A-1946					
-005	NO-9A-1943					
-006	NO-9A-2078					
-007	NO-9A-1959					
-008	NO-9A-1957					
-009	NO-9A-1992					
-010	NO-9A-1948					
-011	NO-9A-1949					
-012	NO-9A-1960					
	NO-9A-1925					

SAMPLED BY (SIGN) _____

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
DATE/TIME	DATE/TIME 1/12/99 0936	DATE/TIME	DATE/TIME

METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY BY (SIGN)	DATE/TIME
Hand Deliver			1/14/99 0940

2

Quanterra - Denver
Sample Receiving Checklist

Lot #: D9A130168 Date/Time Received: 1/13/99 0940

Company Name & Sampling Site: Roy F Weston

*Cooler #(s): 1

Temperatures: 1

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
	☑	☐	1. Radiation checked, record if reading > 0.5 mR/hr. (_____mR/hr)	MD
	☑	☐	2. Cooler seals intact.	
	☑	☐	3. Chain of custody present.	
	☐	☑	4. Bottles broken and/or are leaking, comment if yes.	
			PHOTOGRAPH BROKEN BOTTLES	
	☑	☐	5. Containers labeled, comment if no.	
	☐	☑	6. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☑	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☑	9. Chain of custody agrees with bottle count, comment if no. Yellow sheet	
	☑	☐	10. Chain of custody agrees with labels, comment if no.	
☐	☑	☐	11. VOA samples filled completely, comment if no.	
☐	☑	☐	12. VOA bottles preserved, check for labels.	
	☐	☑	13. Did samples require preservation with sodium thiosulfate?	
☐	☐	☑	14. If yes to #12, did the samples contain residual chlorine?	
☐	☐	☑	15. Sediment present in "D," dissolved, bottles.	
	☐	☑	16. Are analyses with short holding times requested?	
☐	☐	☑	17. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☑	18. Multiphase samples present? If yes, comment below.	
	☐	☑	19. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☐	☐	☐	20. Clear picture taken, labeled, and stapled to project folder.	
☐	☐	☐	21. Subcontract COC signed and sent with samples to bottle prep?	
	☐	☐	22. Was sample labeling double checked by a second person?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR)

EXECUTIVE SUMMARY - Detection Highlights

D9A130168

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1978 01/11/99 001				
Silver	2.1	0.10	mg/kg	SW846 6020
Arsenic	461	10.0	mg/kg	SW846 6020
Barium	160	0.10	mg/kg	SW846 6020
Cobalt	14.9	1.0	mg/kg	SW846 6020
Chromium	29.2	1.0	mg/kg	SW846 6020
Manganese	292	1.0	mg/kg	SW846 6020
Nickel	10.7	1.0	mg/kg	SW846 6020
Lead	317	50.0	mg/kg	SW846 6020
Antimony	1.5 B	6.0	mg/kg	SW846 6020
Selenium	1.1	0.50	mg/kg	SW846 6020
Thallium	0.47 B	1.0	mg/kg	SW846 6020
Vanadium	23.1	5.0	mg/kg	SW846 6020
ND-98-1977 01/11/99 002				
Silver	0.50	0.10	mg/kg	SW846 6020
Arsenic	499	10.0	mg/kg	SW846 6020
Barium	138	0.10	mg/kg	SW846 6020
Cobalt	14.5	1.0	mg/kg	SW846 6020
Chromium	20.8	1.0	mg/kg	SW846 6020
Manganese	236	1.0	mg/kg	SW846 6020
Nickel	9.7	1.0	mg/kg	SW846 6020
Lead	238	50.0	mg/kg	SW846 6020
Antimony	1.7 B	6.0	mg/kg	SW846 6020
Selenium	0.88	0.50	mg/kg	SW846 6020
Thallium	0.40 B	1.0	mg/kg	SW846 6020
Vanadium	19.9	5.0	mg/kg	SW846 6020
ND-98-2096 01/11/99 003				
Silver	0.26	0.10	mg/kg	SW846 6020
Arsenic	296	10.0	mg/kg	SW846 6020
Barium	145	0.10	mg/kg	SW846 6020
Cobalt	12.6	1.0	mg/kg	SW846 6020
Chromium	24.0	1.0	mg/kg	SW846 6020
Manganese	190	1.0	mg/kg	SW846 6020
Nickel	9.5	1.0	mg/kg	SW846 6020
Lead	348	50.0	mg/kg	SW846 6020
Antimony	1.3 B	6.0	mg/kg	SW846 6020
Selenium	0.89	0.50	mg/kg	SW846 6020
Thallium	0.45 B	1.0	mg/kg	SW846 6020
Vanadium	19.6	5.0	mg/kg	SW846 6020

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D9A130168

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1946 01/11/99 004				
Silver	0.95	0.10	mg/kg	SW846 6020
Arsenic	311	10.0	mg/kg	SW846 6020
Barium	128	0.10	mg/kg	SW846 6020
Cobalt	11.5	1.0	mg/kg	SW846 6020
Chromium	24.0	1.0	mg/kg	SW846 6020
Manganese	252	1.0	mg/kg	SW846 6020
Nickel	7.6	1.0	mg/kg	SW846 6020
Lead	155	50.0	mg/kg	SW846 6020
Antimony	0.64 B	6.0	mg/kg	SW846 6020
Selenium	0.72	0.50	mg/kg	SW846 6020
Thallium	0.34 B	1.0	mg/kg	SW846 6020
Vanadium	19.5	5.0	mg/kg	SW846 6020
ND-98-1943 01/11/99 005				
Silver	1.1	0.10	mg/kg	SW846 6020
Arsenic	372	10.0	mg/kg	SW846 6020
Barium	123	0.10	mg/kg	SW846 6020
Cobalt	10.8	1.0	mg/kg	SW846 6020
Chromium	23.5	1.0	mg/kg	SW846 6020
Manganese	257	1.0	mg/kg	SW846 6020
Nickel	9.0	1.0	mg/kg	SW846 6020
Lead	301	50.0	mg/kg	SW846 6020
Antimony	1.0 B	6.0	mg/kg	SW846 6020
Selenium	0.84	0.50	mg/kg	SW846 6020
Thallium	0.41 B	1.0	mg/kg	SW846 6020
Vanadium	18.9	5.0	mg/kg	SW846 6020
ND-98-2048 01/11/99 006				
Silver	0.46	0.10	mg/kg	SW846 6020
Arsenic	764	10.0	mg/kg	SW846 6020
Barium	156	0.10	mg/kg	SW846 6020
Cobalt	14.7	1.0	mg/kg	SW846 6020
Chromium	28.4	1.0	mg/kg	SW846 6020
Manganese	152	1.0	mg/kg	SW846 6020
Nickel	10.2	1.0	mg/kg	SW846 6020
Lead	380	50.0	mg/kg	SW846 6020
Antimony	3.7 B	6.0	mg/kg	SW846 6020
Selenium	1.3	0.50	mg/kg	SW846 6020
Thallium	0.52 B	1.0	mg/kg	SW846 6020
Vanadium	16.8	5.0	mg/kg	SW846 6020

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D9A130168

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1959 01/11/99 007				
Silver	0.78	0.10	mg/kg	SW846 6020
Arsenic	1070	20.0	mg/kg	SW846 6020
Barium	137	0.10	mg/kg	SW846 6020
Cobalt	17.3	2.0	mg/kg	SW846 6020
Chromium	26.7	2.0	mg/kg	SW846 6020
Manganese	242	2.0	mg/kg	SW846 6020
Nickel	8.5	2.0	mg/kg	SW846 6020
Lead	288	100	mg/kg	SW846 6020
Antimony	3.6 B	6.0	mg/kg	SW846 6020
Selenium	2.1 B	10.0	mg/kg	SW846 6020
Thallium	0.42 B	1.0	mg/kg	SW846 6020
Vanadium	20.0	10.0	mg/kg	SW846 6020
ND-98-1957 01/11/99 008				
Silver	1.6	0.10	mg/kg	SW846 6020
Arsenic	826	20.0	mg/kg	SW846 6020
Barium	148	0.10	mg/kg	SW846 6020
Cobalt	13.5	2.0	mg/kg	SW846 6020
Chromium	42.6	2.0	mg/kg	SW846 6020
Manganese	258	2.0	mg/kg	SW846 6020
Nickel	8.7	2.0	mg/kg	SW846 6020
Lead	513	100	mg/kg	SW846 6020
Antimony	1.9 B	6.0	mg/kg	SW846 6020
Selenium	1.3	0.50	mg/kg	SW846 6020
Thallium	0.37 B	1.0	mg/kg	SW846 6020
Vanadium	19.7	10.0	mg/kg	SW846 6020
ND-98-1992 01/11/99 009				
Silver	0.76	0.10	mg/kg	SW846 6020
Arsenic	412	10.0	mg/kg	SW846 6020
Barium	133	0.10	mg/kg	SW846 6020
Cobalt	10.4	1.0	mg/kg	SW846 6020
Chromium	21.1	1.0	mg/kg	SW846 6020
Manganese	235	1.0	mg/kg	SW846 6020
Nickel	7.8	1.0	mg/kg	SW846 6020
Lead	233	50.0	mg/kg	SW846 6020
Antimony	1.2 B	6.0	mg/kg	SW846 6020
Selenium	1.1	0.50	mg/kg	SW846 6020
Thallium	0.37 B	1.0	mg/kg	SW846 6020
Vanadium	18.2	5.0	mg/kg	SW846 6020

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D9A130168

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1949 01/11/99 010				
Silver	0.92	0.10	mg/kg	SW846 6020
Arsenic	265	5.0	mg/kg	SW846 6020
Barium	129	0.10	mg/kg	SW846 6020
Cobalt	7.7	0.50	mg/kg	SW846 6020
Chromium	27.5	0.50	mg/kg	SW846 6020
Manganese	247	0.50	mg/kg	SW846 6020
Nickel	7.7	0.50	mg/kg	SW846 6020
Lead	215	25.0	mg/kg	SW846 6020
Antimony	0.77 B	6.0	mg/kg	SW846 6020
Selenium	0.73	0.50	mg/kg	SW846 6020
Thallium	0.28 B	1.0	mg/kg	SW846 6020
Vanadium	17.6	2.5	mg/kg	SW846 6020
ND-98-1960 01/11/99 011				
Silver	0.64	0.10	mg/kg	SW846 6020
Arsenic	492	10.0	mg/kg	SW846 6020
Barium	148	0.10	mg/kg	SW846 6020
Cobalt	27.4	1.0	mg/kg	SW846 6020
Chromium	27.4	1.0	mg/kg	SW846 6020
Manganese	264	1.0	mg/kg	SW846 6020
Nickel	8.6	1.0	mg/kg	SW846 6020
Lead	128	50.0	mg/kg	SW846 6020
Antimony	0.81 B	6.0	mg/kg	SW846 6020
Selenium	0.88	0.50	mg/kg	SW846 6020
Thallium	0.29 B	1.0	mg/kg	SW846 6020
Vanadium	24.2	5.0	mg/kg	SW846 6020
ND-98-1928 01/11/99 012				
Silver	0.87	0.10	mg/kg	SW846 6020
Arsenic	190	10.0	mg/kg	SW846 6020
Barium	134	0.10	mg/kg	SW846 6020
Cobalt	9.4	1.0	mg/kg	SW846 6020
Chromium	17.8	1.0	mg/kg	SW846 6020
Manganese	270	1.0	mg/kg	SW846 6020
Nickel	7.4	1.0	mg/kg	SW846 6020
Lead	164	50.0	mg/kg	SW846 6020
Antimony	0.60 B	6.0	mg/kg	SW846 6020
Selenium	0.70	0.50	mg/kg	SW846 6020
Thallium	0.29 B	1.0	mg/kg	SW846 6020
Vanadium	18.9	5.0	mg/kg	SW846 6020

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

D9A130168

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1948 01/11/99 013				
Silver	1.0	0.10	mg/kg	SW846 6020
Arsenic	338	5.0	mg/kg	SW846 6020
Barium	130	0.10	mg/kg	SW846 6020
Cobalt	8.2	0.50	mg/kg	SW846 6020
Chromium	31.7	0.50	mg/kg	SW846 6020
Manganese	283	0.50	mg/kg	SW846 6020
Nickel	8.0	0.50	mg/kg	SW846 6020
Lead	163	25.0	mg/kg	SW846 6020
Antimony	0.49 B	6.0	mg/kg	SW846 6020
Selenium	0.78	0.50	mg/kg	SW846 6020
Thallium	0.32 B	1.0	mg/kg	SW846 6020
Vanadium	18.3	2.5	mg/kg	SW846 6020

ANALYTICAL METHODS SUMMARY

D9A130168

PARAMETER	ANALYTICAL METHOD
ICP-MS (6020)	SW846 6020

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9A130168

ANALYTICAL METHOD	ANALYST	ANALYST ID
SW846 6020	Dave B. Roberts	002871

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D9A130168

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CPX4K	001	ND-98-1978	01/11/99	
CPX4N	002	ND-98-1977	01/11/99	
CPX4R	003	ND-98-2096	01/11/99	
CPX4X	004	ND-98-1946	01/11/99	
CPX51	005	ND-98-1943	01/11/99	
CPX52	006	ND-98-2048	01/11/99	
CPX53	007	ND-98-1959	01/11/99	
CPX54	008	ND-98-1957	01/11/99	
CPX55	009	ND-98-1992	01/11/99	
CPX56	010	ND-98-1949	01/11/99	
CPX57	011	ND-98-1960	01/11/99	
CPX58	012	ND-98-1928	01/11/99	
CPX5K	013	ND-98-1948	01/11/99	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9A130168

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	SW846 6020		9014239	9015073
002	SOLID	SW846 6020		9014239	9015073
003	SOLID	SW846 6020		9014239	9015073
004	SOLID	SW846 6020		9014239	9015073
005	SOLID	SW846 6020		9014239	9015073
006	SOLID	SW846 6020		9014239	9015073
007	SOLID	SW846 6020		9014239	9015073
008	SOLID	SW846 6020		9014239	9015073
009	SOLID	SW846 6020		9014239	9015073
010	SOLID	SW846 6020		9014239	9015073
011	SOLID	SW846 6020		9014239	9015073
012	SOLID	SW846 6020		9014239	9015073
013	SOLID	SW846 6020		9014239	9015073

Quanterra, Inc.

Cover Page - Inorganic Analysis Data Package

Client ID	Lab Sample ID:
ND-98-1928	CPX58
ND-98-1943	CPX51
ND-98-1946	CPX4X
ND-98-1948	CPX5K
ND-98-1949	CPX56
ND-98-1957	CPX54
ND-98-1959	CPX53
ND-98-1960	CPX57
ND-98-1977	CPX4N
ND-98-1978	CPX4K
ND-98-1992	CPX55
ND-98-2048	CPX52
ND-98-2096	CPX4R

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than conditions detailed above. Release of the data combined in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Richard Clinkscales

Date: 2/11/99 Title: MetGrpLdr

WESTON, ROY F.

Client Sample ID: ND-98-1978

TOTAL Metals

Lot-Sample #...: D9A130168-001 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	2.1	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10C
Arsenic	461	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10D
Barium	160	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10E
Cobalt	14.9	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10F
Chromium	29.2	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10G
Manganese	292	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10H
Nickel	10.7	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10J
Lead	317	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10K
Antimony	1.5 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10L
Selenium	1.1	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10M
Thallium	0.47 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10N
Vanadium	23.1	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4K10P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1977

TOTAL Metals

Lot-Sample #...: D9A130168-002 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.50	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10C
Arsenic	499	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10D
Barium	138	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10E
Cobalt	14.5	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10F
Chromium	20.8	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10G
Manganese	236	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10H
Nickel	9.7	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10J
Lead	238	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10K
Antimony	1.7 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10L
Selenium	0.88	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10M
Thallium	0.40 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10N
Vanadium	19.9	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4N10P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-2096

TOTAL Metals

Lot-Sample #...: D9A130168-003 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.26	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10C
Arsenic	296	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10D
Barium	145	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10E
Cobalt	12.6	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10F
Chromium	24.0	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10G
Manganese	190	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10H
Nickel	9.5	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10J
Lead	348	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10K
Antimony	1.3 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10L
Selenium	0.89	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10M
Thallium	0.45 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10N
Vanadium	19.6	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4R10P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1946

TOTAL Metals

Lot-Sample #...: D9A130168-004 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.95	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10C
Arsenic	311	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10D
Barium	128	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10E
Cobalt	11.5	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10F
Chromium	24.0	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10G
Manganese	252	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10H
Nickel	7.6	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10J
Lead	155	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10K
Antimony	0.64 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10L
Selenium	0.72	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10M
Thallium	0.34 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10N
Vanadium	19.5	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX4X10P

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1943

TOTAL Metals

Lot-Sample #...: D9A130168-005 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	1.1	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5110C
Arsenic	372	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110D
Barium	123	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5110E
Cobalt	10.8	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110F
Chromium	23.5	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110G
Manganese	257	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110H
Nickel	9.0	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110J
Lead	301	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110K
Antimony	1.0 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110L
Selenium	0.84	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5110M
Thallium	0.41 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110N
Vanadium	18.9	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5110P

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-2048

TOTAL Metals

Lot-Sample #...: D9A130168-006 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.46	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5210C
Arsenic	764	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210D
Barium	156	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5210E
Cobalt	14.7	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210F
Chromium	28.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210G
Manganese	152	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210H
Nickel	10.2	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210J
Lead	380	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210K
Antimony	3.7 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210L
Selenium	1.3	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5210M
Thallium	0.52 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210N
Vanadium	16.8	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5210P

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1959

TOTAL Metals

Lot-Sample #...: D9A130168-007 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.78	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5310C
Arsenic	1070	20.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310D
Barium	137	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5310E
Cobalt	17.3	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310F
Chromium	26.7	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310G
Manganese	242	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310H
Nickel	8.5	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310J
Lead	288	100	mg/kg	SW846 6020	01/18-02/02/99	CPX5310K
Antimony	3.6 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310L
Selenium	2.1 B	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310M
Thallium	0.42 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310N
Vanadium	20.0	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5310P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1957

TOTAL Metals

Lot-Sample #...: D9A130168-008 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	1.6	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5410C
Arsenic	826	20.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410D
Barium	148	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5410E
Cobalt	13.5	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410F
Chromium	42.6	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410G
Manganese	258	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410H
Nickel	8.7	2.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410J
Lead	513	100	mg/kg	SW846 6020	01/18-02/02/99	CPX5410K
Antimony	1.9 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410L
Selenium	1.3	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5410M
Thallium	0.37 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410N
Vanadium	19.7	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5410P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1992

TOTAL Metals

Lot-Sample #...: D9A130168-009 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.76	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5510C
Arsenic	412	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510D
Barium	133	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5510E
Cobalt	10.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510F
Chromium	21.1	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510G
Manganese	235	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510H
Nickel	7.8	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510J
Lead	233	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510K
Antimony	1.2 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510L
Selenium	1.1	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5510M
Thallium	0.37 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510N
Vanadium	18.2	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5510P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1949

TOTAL Metals

Lot-Sample #...: D9A130168-010 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.92	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5610C
Arsenic	265	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5610D
Barium	129	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5610E
Cobalt	7.7	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5610F
Chromium	27.5	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5610G
Manganese	247	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5610H
Nickel	7.7	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5610J
Lead	215	25.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5610K
Antimony	0.77 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5610L
Selenium	0.73	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5610M
Thallium	0.28 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5610N
Vanadium	17.6	2.5	mg/kg	SW846 6020	01/18-02/02/99	CPX5610P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1960

TOTAL Metals

Lot-Sample #...: D9A130168-011 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.64	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5710C
Arsenic	492	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710D
Barium	148	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5710E
Cobalt	27.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710F
Chromium	27.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710G
Manganese	264	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710H
Nickel	8.6	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710J
Lead	128	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710K
Antimony	0.81 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710L
Selenium	0.88	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5710M
Thallium	0.29 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710N
Vanadium	24.2	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5710P

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1928

TOTAL Metals

Lot-Sample #...: D9A130168-012 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	0.87	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5810C
Arsenic	190	10.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810D
Barium	134	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5810E
Cobalt	9.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810F
Chromium	17.8	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810G
Manganese	270	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810H
Nickel	7.4	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810J
Lead	164	50.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810K
Antimony	0.60 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810L
Selenium	0.70	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5810M
Thallium	0.29 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810N
Vanadium	18.9	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5810P

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1948

TOTAL Metals

Lot-Sample #...: D9A130168-013 Matrix.....: SOLID
Date Sampled...: 01/11/99 Date Received..: 01/13/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9014239						
Silver	1.0	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10C
Arsenic	338	5.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10D
Barium	130	0.10	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10E
Cobalt	8.2	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10F
Chromium	31.7	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10G
Manganese	283	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10H
Nickel	8.0	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10J
Lead	163	25.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10K
Antimony	0.49 B	6.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10L
Selenium	0.78	0.50	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10M
Thallium	0.32 B	1.0	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10N
Vanadium	18.3	2.5	mg/kg	SW846 6020	01/18-02/02/99	CPX5K10P

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICPMS **Units:** ug/L

Chart Number: 020299R.rep **Acceptable Range:** 90% - 110%

Standard Source: **Standard ID:**

Element	WL/ Mass	True Conc	QC Std 1 2/2/99 9:14 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	200	207.06	**103.5**								
Arsenic	75	200	197.7	**98.8**								
Barium	135	200	206.6	**103.3**								
Chromium	52	200	204.1	**102.0**								
Cobalt	59	200	194.22	**97.1**								
Lead	208	200	203.97	**102.0**								
Manganese	55	200	193.57	**96.8**								
Nickel	60	200	199.28	**99.6**								
Selenium	82	200	208.36	**104.2**								
Silver	107	200	205.65	**102.8**								
Thallium	205	200	207.7	**103.8**								
Vanadium	51	200	201.98	**101.0**								

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS

Units: ug/L

Chart Number: 020299R.rep

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 3 2/2/99 9:38 AM Found	% Rec	QC Std 3 2/2/99 9:57 AM Found	% Rec	QC Std 3 2/2/99 10:37 AM Found	% Rec	QC Std 3 2/2/99 10:56 AM Found	% Rec	QC Std 3 2/2/99 11:37 AM Found	% Rec
Antimony	121	100	102.23	**102.2**	101.96	**102.0**	101.3	**101.3**	100.91	**100.9**	99.526	**99.5**
Arsenic	75	100	101.61	**101.6**	99.754	**99.8**	101.26	**101.3**	100.58	**100.6**	103.07	**103.1**
Barium	135	100	102.49	**102.5**	102.11	**102.1**	103.13	**103.1**	98.989	**99.0**	99.204	**99.2**
Chromium	52	100	103.04	**103.0**	101.59	**101.6**	102.46	**102.5**	99.926	**99.9**	93.222	**93.2**
Cobalt	59	100	101.3	**101.3**	99	**99.0**	99.375	**99.4**	98.496	**98.5**	97.593	**97.6**
Lead	208	100	101.9	**101.9**	99.367	**99.4**	98.423	**98.4**	101.5	**101.5**	100.05	**100.1**
Manganese	55	100	99.787	**99.8**	99.95	**99.9**	101.68	**101.7**	99.522	**99.5**	95.915	**95.9**
Nickel	60	100	99.734	**99.7**	98.736	**98.7**	98.727	**98.7**	99.485	**99.5**	97.596	**97.6**
Selenium	82	100	102.89	**102.9**	100.04	**100.0**	96.031	**96.0**	101.45	**101.5**	102.02	**102.0**
Silver	107	100	103.19	**103.2**	99.64	**99.6**	97.507	**97.5**	99.534	**99.5**	98.944	**98.9**
Thallium	205	100	101.77	**101.8**	98.951	**99.0**	98.722	**98.7**	101.12	**101.1**	100.57	**100.6**
Vanadium	51	100	103.96	**104.0**	100.05	**100.0**	100.29	**100.3**	98.111	**98.1**	95.821	**95.8**

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS

Units: ug/L

Chart Number: 020299R.rep

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 3 2/2/99 12:14 PM		QC Std 3 2/2/99 12:38 PM		QC Std 3 2/2/99 1:23 PM		QC Std 3 2/2/99 2:13 PM		QC Std 3 2/2/99 2:46 PM	
			Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	100	98.853	**98.9**	100.08	**100.1**	99.746	**99.7**	100.68	**100.7**	98.114	**98.1**
Arsenic	75	100	101.84	**101.8**	100.3	**100.3**	99.191	**99.2**	102.34	**102.3**	99.786	**99.8**
Barium	135	100	100.93	**100.9**	97.652	**97.7**	99.343	**99.3**	100.87	**100.9**	98.525	**98.5**
Chromium	52	100	97.462	**97.5**	101.18	**101.2**	104.5	**104.5**	105.58	**105.6**	104.12	**104.1**
Cobalt	59	100	94.735	**94.7**	101.01	**101.0**	103.53	**103.5**	99.776	**99.8**	99.324	**99.3**
Lead	208	100	97.307	**97.3**	99.727	**99.7**	100.67	**100.7**	100.5	**100.5**	98.876	**98.9**
Manganese	55	100	96.235	**96.2**	102.31	**102.3**	105.1	**105.1**	102.2	**102.2**	102.38	**102.4**
Nickel	60	100	97	**97.0**	100.2	**100.2**	101.85	**101.8**	99.531	**99.5**	98.869	**98.9**
Selenium	82	100	102.78	**102.8**	100.51	**100.5**	99.06	**99.1**	105.24	**105.2**	102.67	**102.7**
Silver	107	100	101.31	**101.3**	98.039	**98.0**	98.777	**98.8**	102.55	**102.5**	99.708	**99.7**
Thallium	205	100	98.155	**98.2**	100.13	**100.1**	101.3	**101.3**	101.34	**101.3**	99.628	**99.6**
Vanadium	51	100	99.833	**99.8**	102.97	**103.0**	104.98	**105.0**	106.25	**106.3**	104.69	**104.7**

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICPMS

Units: ug/L

Chart Number: 020299R.rep

Standard Source:

Standard ID:

Element	WL/ Mass	Report Limit	QC Std 2 2/2/99 9:18 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U								
Arsenic	75	5	5	U								
Barium	135	1	1	U								
Chromium	52	1	1	U								
Cobalt	59	1	1	U								
Lead	208	1	1	U								
Manganese	55	1	1	U								
Nickel	60	1	1	U								
Selenium	82	5	5	U								
Silver	107	1	1	U								
Thallium	205	1	1	U								
Vanadium	51	5	5	U								

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 020299R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 5 2/2/99 9:43 AM		QC Std 4 2/2/99 10:01 AM		QC Std 4 2/2/99 10:42 AM		QC Std 4 2/2/99 11:01 AM		QC Std 4 2/2/99 11:42 AM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U	1	U	1	U	1	U	1	U
Arsenic	75	5	5	U	5	U	5	U	5	U	5	U
Barium	135	1	1	U	1	U	1	U	1	U	1	U
Chromium	52	1	1	U	1	U	1	U	1	U	1	U
Cobalt	59	1	1	U	1	U	1	U	1	U	1	U
Lead	208	1	1	U	1	U	1	U	1	U	1	U
Manganese	55	1	1	U	1	U	1	U	1	U	1	U
Nickel	60	1	1	U	1	U	1	U	1	U	1	U
Selenium	82	5	5	U	5	U	5	U	5	U	5	U
Silver	107	1	1	U	1	U	1	U	1	U	1	U
Thallium	205	1	1	U	1	U	1	U	1	U	1	U
Vanadium	51	5	5	U	5	U	5	U	5	U	5	U

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 020299R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 4 2/2/99 12:22 PM		QC Std 4 2/2/99 12:43 PM		QC Std 4 2/2/99 1:28 PM		QC Std 5 2/2/99 2:18 PM		QC Std 5 2/2/99 2:50 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U	1	U	1	U	1	U	1	U
Arsenic	75	5	5	U	5	U	5	U	5	U	5	U
Barium	135	1	1	U	1	U	1	U	1	U	1	U
Chromium	52	1	1	U	1	U	1	U	1	U	1	U
Cobalt	59	1	1	U	1	U	1	U	1	U	1	U
Lead	208	1	1	U	1	U	1	U	1	U	1	U
Manganese	55	1	1	U	1	U	1	U	1	U	1	U
Nickel	60	1	1	U	1	U	1	U	1	U	1	U
Selenium	82	5	5	U	5	U	5	U	5	U	5	U
Silver	107	1	1	U	1	U	1	U	1	U	1	U
Thallium	205	1	1	U	1	U	1	U	1	U	1	U
Vanadium	51	5	5	U	5	U	5	U	5	U	5	U

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D9A130168 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D9A140000-239 **Prep Batch #...:** 9014239						
Silver	ND	0.10	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT101
Arsenic	ND	1.0	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT102
Barium	**0.066 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/18-02/02/99**	**CQ0CT103**
Cobalt	ND	0.10	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT104
Chromium	**0.094 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/18-02/02/99**	**CQ0CT105**
Manganese	**0.021 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/18-02/02/99**	**CQ0CT106**
Nickel	**0.037 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/18-02/02/99**	**CQ0CT107**
Lead	ND	5.0	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT108
Antimony	ND	6.0	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT109
Selenium	ND	0.50	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT10A
Thallium	ND	1.0	mg/kg	SW846 6020	01/18-02/02/99	CQ0CT10C
Vanadium	**0.013 B**	**0.50**	**mg/kg**	**SW846 6020**	**01/18-02/02/99**	**CQ0CT10D**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

FORM 3
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICPMS **Units:** ug/L

Chart Number: 020299R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	True Conc	ICSA 2/2/99 9:23 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1		1.8									
Arsenic	75	5		5	U								
Barium	135	1		1	U								
Chromium	52	1		9.7									
Cobalt	59	1		1	U								
Lead	208	1		1.3									
Manganese	55	1		4.8									
Nickel	60	1		3.4									
Selenium	82	5		5	U								
Silver	107	1		1	U								
Thallium	205	1		1	U								
Vanadium	51	5		5	U								

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICPMS

Units: ug/L

Chart Number: 020299R.rep

Acceptable Range: 70% - 130%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICSAB 2/2/99 9:29 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	100	104.47	**104.5**								
Arsenic	75	100	98.564	**98.6**								
Barium	135	100	103.15	**103.2**								
Chromium	52	100	108.72	**108.7**								
Cobalt	59	100	96.366	**96.4**								
Lead	208	100	99.565	**99.6**								
Manganese	55	100	102.12	**102.1**								
Nickel	60	100	97.015	**97.0**								
Selenium	82	100	102.14	**102.1**								
Silver	107	100	97.993	**98.0**								
Thallium	205	100	97.228	**97.2**								
Vanadium	51	100	101.34	**101.3**								

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D9A130168 **Matrix.....:** SOLID
Date Sampled...: 01/11/99 **Date Received..:** 01/13/99

Percnt Moisture: 100

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130168-012 **Prep Batch #...:** 9014239								
Silver	0.87	20.0	20.4	mg/kg	98	SW846 6020	01/18-02/02/99	CPX5810Q
Arsenic	190	20.0	209	mg/kg		SW846 6020	01/18-02/02/99	CPX5810R
			Qualifiers: NC,MSB					
Barium	134	20.0	152	mg/kg		SW846 6020	01/18-02/02/99	CPX5810T
			Qualifiers: NC,MSB					
Cobalt	9.4	20.0	28.2	mg/kg	94	SW846 6020	01/18-02/02/99	CPX5810U
Chromium	17.8	20.0	38.1	mg/kg	101	SW846 6020	01/18-02/02/99	CPX5810V
Manganese	270	20.0	285	mg/kg		SW846 6020	01/18-02/02/99	CPX5810W
			Qualifiers: NC,MSB					
Nickel	7.4	20.0	25.9	mg/kg	93	SW846 6020	01/18-02/02/99	CPX5810X
Lead	164	20.0	182	mg/kg		SW846 6020	01/18-02/02/99	CPX58110
			Qualifiers: NC,MSB					
Antimony	0.60	20.0	3.69 N	mg/kg	15	SW846 6020	01/18-02/02/99	CPX58111
Selenium	0.70	20.0	20.0	mg/kg	96	SW846 6020	01/18-02/02/99	CPX58112
Thallium	0.29	20.0	17.6	mg/kg	87	SW846 6020	01/18-02/02/99	CPX58113
Vanadium	18.9	20.0	39.0	mg/kg	101	SW846 6020	01/18-02/02/99	CPX58114

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

FORM 5A
Equivalent

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D9A130168 **Matrix.....:** SOLID
Date Sampled...: 01/11/99 **Date Received..:** 01/13/99

Percnt Moisture: 100

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130168-012	**Prep Batch #...:** 9014239				
Silver	98	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810Q
Arsenic	NC,MSB	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810R
Barium	NC,MSB	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810T
Cobalt	94	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810U
Chromium	101	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810V
Manganese	NC,MSB	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810W
Nickel	93	(70 - 130)	SW846 6020	01/18-02/02/99	CPX5810X
Lead	NC,MSB	(70 - 130)	SW846 6020	01/18-02/02/99	CPX58110
Antimony	15 N	(70 - 130)	SW846 6020	01/18-02/02/99	CPX58111
Selenium	96	(70 - 130)	SW846 6020	01/18-02/02/99	CPX58112
Thallium	87	(70 - 130)	SW846 6020	01/18-02/02/99	CPX58113
Vanadium	101	(70 - 130)	SW846 6020	01/18-02/02/99	CPX58114

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

FORM 5A
Equivalent

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: D9A130168 **Work Order #...:** CPX58-SMP CPX58-DUP **Matrix.....:** SOLID

Date Sampled...: 01/11/99 **Date Received..:** 01/13/99

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Silver						SD Lot-Sample #: D9A130168-012		
	0.87	0.85	mg/kg	1.9	(0-20)	SW846 6020	01/18-02/02/99	9014239
Arsenic						SD Lot-Sample #: D9A130168-012		
	190	186	mg/kg	2.1	(0-20)	SW846 6020	01/18-02/02/99	9014239
Barium						SD Lot-Sample #: D9A130168-012		
	134	128	mg/kg	4.4	(0-20)	SW846 6020	01/18-02/02/99	9014239
Cobalt						SD Lot-Sample #: D9A130168-012		
	9.4	9.1	mg/kg	4.1	(0-20)	SW846 6020	01/18-02/02/99	9014239
Chromium						SD Lot-Sample #: D9A130168-012		
	17.8	17.0	mg/kg	5.1	(0-20)	SW846 6020	01/18-02/02/99	9014239
Manganese						SD Lot-Sample #: D9A130168-012		
	270	260	mg/kg	3.8	(0-20)	SW846 6020	01/18-02/02/99	9014239
Nickel						SD Lot-Sample #: D9A130168-012		
	7.4	7.2	mg/kg	3.1	(0-20)	SW846 6020	01/18-02/02/99	9014239
Lead						SD Lot-Sample #: D9A130168-012		
	164	160	mg/kg	2.5	(0-20)	SW846 6020	01/18-02/02/99	9014239
Antimony						SD Lot-Sample #: D9A130168-012		
	0.60 B	0.60	mg/kg	0.40	(0-20)	SW846 6020	01/18-02/02/99	9014239
Selenium						SD Lot-Sample #: D9A130168-012		
	0.70	0.62	mg/kg	13	(0-20)	SW846 6020	01/18-02/02/99	9014239
Thallium						SD Lot-Sample #: D9A130168-012		
	0.29 B	0.28	mg/kg	3.5	(0-20)	SW846 6020	01/18-02/02/99	9014239
Vanadium						SD Lot-Sample #: D9A130168-012		
	18.9	18.0	mg/kg	4.8	(0-20)	SW846 6020	01/18-02/02/99	9014239

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

FORM 6
Equivalent

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D9A130168 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Antimony	20.0	19.3	mg/kg	96		SW846 6020	01/18-02/02/99	9014239
	20.0	19.0	mg/kg	95	1.2	SW846 6020	01/18-02/02/99	9014239
Arsenic	20.0	19.8	mg/kg	99		SW846 6020	01/18-02/02/99	9014239
	20.0	19.4	mg/kg	97	2.0	SW846 6020	01/18-02/02/99	9014239
Barium	20.0	20.8	mg/kg	104		SW846 6020	01/18-02/02/99	9014239
	20.0	20.8	mg/kg	104	0.39	SW846 6020	01/18-02/02/99	9014239
Chromium	20.0	20.4	mg/kg	102		SW846 6020	01/18-02/02/99	9014239
	20.0	20.0	mg/kg	100	2.2	SW846 6020	01/18-02/02/99	9014239
Cobalt	20.0	19.5	mg/kg	97		SW846 6020	01/18-02/02/99	9014239
	20.0	19.4	mg/kg	97	0.71	SW846 6020	01/18-02/02/99	9014239
Lead	20.0	20.0	mg/kg	100		SW846 6020	01/18-02/02/99	9014239
	20.0	19.8	mg/kg	99	0.76	SW846 6020	01/18-02/02/99	9014239
Manganese	20.0	20.2	mg/kg	101		SW846 6020	01/18-02/02/99	9014239
	20.0	19.7	mg/kg	98	2.9	SW846 6020	01/18-02/02/99	9014239
Nickel	20.0	19.7	mg/kg	99		SW846 6020	01/18-02/02/99	9014239
	20.0	19.5	mg/kg	98	1.1	SW846 6020	01/18-02/02/99	9014239
Selenium	20.0	19.4	mg/kg	97		SW846 6020	01/18-02/02/99	9014239
	20.0	19.0	mg/kg	95	2.0	SW846 6020	01/18-02/02/99	9014239
Silver	20.0	21.4	mg/kg	107		SW846 6020	01/18-02/02/99	9014239
	20.0	21.3	mg/kg	106	0.78	SW846 6020	01/18-02/02/99	9014239
Thallium	20.0	19.7	mg/kg	99		SW846 6020	01/18-02/02/99	9014239
	20.0	19.7	mg/kg	99	0.03	SW846 6020	01/18-02/02/99	9014239
Vanadium	20.0	19.4	mg/kg	97		SW846 6020	01/18-02/02/99	9014239
	20.0	19.7	mg/kg	98	1.3	SW846 6020	01/18-02/02/99	9014239

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM 7
Equivalent

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D9A130168 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Antimony	96	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	95	(70 - 130)	1.2	(0-20)	SW846 6020	01/18-02/02/99	9014239
Arsenic	99	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	97	(70 - 130)	2.0	(0-20)	SW846 6020	01/18-02/02/99	9014239
Barium	104	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	104	(70 - 130)	0.39	(0-20)	SW846 6020	01/18-02/02/99	9014239
Chromium	102	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	100	(70 - 130)	2.2	(0-20)	SW846 6020	01/18-02/02/99	9014239
Cobalt	97	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	97	(70 - 130)	0.71	(0-20)	SW846 6020	01/18-02/02/99	9014239
Lead	100	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	99	(70 - 130)	0.76	(0-20)	SW846 6020	01/18-02/02/99	9014239
Manganese	101	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	98	(70 - 130)	2.9	(0-20)	SW846 6020	01/18-02/02/99	9014239
Nickel	99	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	98	(70 - 130)	1.1	(0-20)	SW846 6020	01/18-02/02/99	9014239
Selenium	97	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	95	(70 - 130)	2.0	(0-20)	SW846 6020	01/18-02/02/99	9014239
Silver	107	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	106	(70 - 130)	0.78	(0-20)	SW846 6020	01/18-02/02/99	9014239
Thallium	99	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	99	(70 - 130)	0.03	(0-20)	SW846 6020	01/18-02/02/99	9014239
Vanadium	97	(70 - 130)			SW846 6020	01/18-02/02/99	9014239
	98	(70 - 130)	1.3	(0-20)	SW846 6020	01/18-02/02/99	9014239

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM 7
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Serial Dilution RPD Report

Serial Dilution Sample ID: CPX58 L

Original Sample ID: CPX58 **Client ID:** ND-98-1928

Matrix: Solid **Units:** ug/L **Prep Date:** 1/18/99 **Prep Batch:** 9014239

Weight: 1 **Volume:** 100 **Percent Moisture:**

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Antimony	121	1000	U	5000	U		10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Arsenic	75	190000		195000		2.8 %	10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Barium	135	138000		139000		1.2 %	10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Chromium	52	17900		18900			10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Cobalt	59	9440		10100			10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Lead	208	164000		170000		3.6 %	10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Manganese	55	270000		294000		9.1 %	10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Nickel	60	7410		7920		6.9 %	10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Selenium	82	5000	U	25000	U		10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Silver	107	1000	U	5000	U		10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Thallium	205	1000	U	5000	U		10	50	ICPMS	2/2/99	14:23	2/2/99	14:28
Vanadium	51	18900		25000	U		10	50	ICPMS	2/2/99	14:23	2/2/99	14:28

Comments:

Version 1.60

* Duplicate analysis RPD was not within limits

Quanterra, Inc.

Metals Data Reporting Form

Instrument Detection Limits

Instrument: ICPMS **Units:** ug/L

Element	Wavelength /Mass	Reporting Limit	IDL	Date of IDL
Antimony	121.00	1	0.1705	12/11/98
Arsenic	75.00	5	0.0818	12/11/98
Barium	135.00	1	0.0127	12/11/98
Chromium	52.00	1	0.06	12/11/98
Cobolt	59.00	1	0.0025	12/11/98
Lead	208.00	3	0.0356	12/11/98
Manganese	55.00	1	0.0123	12/11/98
Nickel	60.00	1	0.0669	12/11/98
Selenium	82.00	5	0.2602	12/11/98
Silver	107.00	1	0.0113	12/11/98
Thallium	205.00	1	0.004	12/11/98
Vanadium	51.00	5	0.029	12/11/98

Quanterra, Inc.

Metals Data Reporting Form

Linear Dynamic Ranges

Instrument: ICPMS **Units:** ug/L

Element	Wavelength /Mass	Linear Range	Date of Linear Range
Antimony	121.00	2000	2/15/98
Arsenic	75.00	1000	2/15/98
Barium	135.00	2000	2/15/98
Chromium	52.00	1000	2/15/98
Cobolt	59.00	1000	2/15/98
Lead	208.00	500	2/15/98
Manganese	55.00	10000	2/15/98
Nickel	60.00	500	2/15/98
Selenium	82.00	2000	2/15/98
Silver	107.00	200	2/15/98
Thallium	205.00	2000	2/15/98
Vanadium	51.00	500	2/15/98

Quanterra, Inc.

Metals Data Reporting Form

Preparation Log

Preparation Batch: 9014239 **Matrix:** SOLID

Sample ID	Prep Date	Weight (g)	Volume (ml)	% Moisture
CQ0CTB	1/18/99	1	100	
CQ0CTC	1/18/99	1	100	
CQ0CTL	1/18/99	1	100	
CPX4K	1/18/99	1	100	
CPX4N	1/18/99	1	100	
CPX4R	1/18/99	1	100	
CPX4X	1/18/99	1	100	
CPX51	1/18/99	1	100	
CPX52	1/18/99	1	100	
CPX53	1/18/99	1	100	
CPX54	1/18/99	1	100	
CPX55	1/18/99	1	100	
CPX56	1/18/99	1	100	
CPX57	1/18/99	1	100	
CPX58	1/18/99	1	100	
CPX5K	1/18/99	1	100	

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICPMS

Chart Number: 020299R.rep

Sample Name	Date of Analysis	Time of Analysis
Blank	2/2/99	9:05 AM
Standard 1	2/2/99	9:09 AM
QC Std 1	2/2/99	9:14 AM
QC Std 2	2/2/99	9:18 AM
ICSA	2/2/99	9:23 AM
ICSA	2/2/99	9:29 AM
BLANK	2/2/99	9:34 AM
QC Std 3	2/2/99	9:38 AM
QC Std 5	2/2/99	9:43 AM
Blank	2/2/99	9:47 AM
Standard 1	2/2/99	9:52 AM
QC Std 3	2/2/99	9:57 AM
QC Std 4	2/2/99	10:01 AM
CQ0CTB	2/2/99	10:06 AM
CQ0CTC	2/2/99	10:10 AM
CQ0CTL	2/2/99	10:15 AM
CPX4K	2/2/99	10:19 AM
CPX4N	2/2/99	10:23 AM
CPX4R	2/2/99	10:28 AM
CPX4X	2/2/99	10:32 AM
QC Std 3	2/2/99	10:37 AM
QC Std 4	2/2/99	10:42 AM
Blank	2/2/99	10:46 AM
Standard 1	2/2/99	10:51 AM
QC Std 3	2/2/99	10:56 AM
QC Std 4	2/2/99	11:01 AM
CPX51	2/2/99	11:05 AM
CPX52	2/2/99	11:09 AM
CPX53	2/2/99	11:14 AM
CPX54	2/2/99	11:18 AM
CPX55	2/2/99	11:23 AM
CPX56	2/2/99	11:27 AM
CPX57	2/2/99	11:32 AM
QC Std 3	2/2/99	11:37 AM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICPMS

Chart Number: 020299R.rep

Sample Name	Date of Analysis	Time of Analysis
QC Std 4	2/2/99	11:42 AM
CPX58	2/2/99	11:47 AM
CPX58 L	2/2/99	11:52 AM
CPX58 PDS	2/2/99	11:56 AM
CPX58S	2/2/99	12:01 PM
CPX58X	2/2/99	12:05 PM
CPX5K	2/2/99	12:09 PM
QC Std 3	2/2/99	12:14 PM
QC Std 4	2/2/99	12:22 PM
Blank	2/2/99	12:29 PM
Standard 1	2/2/99	12:33 PM
QC Std 3	2/2/99	12:38 PM
QC Std 4	2/2/99	12:43 PM
CPX4K	2/2/99	12:47 PM
CPX4N	2/2/99	12:52 PM
CPX4R	2/2/99	12:56 PM
CPX4X	2/2/99	1:01 PM
CPX51	2/2/99	1:05 PM
CPX52	2/2/99	1:09 PM
CPX53	2/2/99	1:14 PM
CPX54	2/2/99	1:18 PM
QC Std 3	2/2/99	1:23 PM
QC Std 4	2/2/99	1:28 PM
CPX55	2/2/99	1:32 PM
CPX56	2/2/99	1:37 PM
CPX57	2/2/99	1:41 PM
CPX58	2/2/99	1:46 PM
CPX58 L	2/2/99	1:50 PM
CPX58 PDS	2/2/99	1:55 PM
CPX58S	2/2/99	1:59 PM
CPX58X	2/2/99	2:04 PM
CPX5K	2/2/99	2:08 PM
QC Std 3	2/2/99	2:13 PM
QC Std 5	2/2/99	2:18 PM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICPMS

Chart Number: 020299R.rep

Sample Name	Date of Analysis	Time of Analysis
CPX58	2/2/99	2:23 PM
CPX58 L	2/2/99	2:28 PM
CPX58 PDS	2/2/99	2:32 PM
CPX58S	2/2/99	2:36 PM
CPX58X	2/2/99	2:41 PM
QC Std 3	2/2/99	2:46 PM
QC Std 5	2/2/99	2:50 PM

ANALYTICAL RAW DATA

FOR

ROY F. WESTON

QUANTERRA INCORPORATED

DENVER NO. D9A130168

Description of Supporting Documentation

The enclosed ***Expanded*** raw data package is arranged in the order in which the initial calibration curve, internal quality control samples, and the samples for this lot were analyzed. Also included are any client requested batch quality control samples. When applicable, the data is organized alphabetically by instrument ID, then chronologically by analysis date.

GC/MS

I. Initial Calibration
   A. Run log pages.
   B. Tuning data (summary, bar graph spectrum, and mass listings).
   C. Initial calibration summary (listing response factors, %RSDs), target compound report, internal standard summary, and chromatograms (RIC).

II. Sample Data

   A. Preparation logs (when applicable), run log pages, target compound report, IS summary, and chromatograms (RIC).
   B. Tuning data (summary, bar graph spectrum, and mass listing).
   C. Continuing calibration summary (response factors, %RSDs, and %Ds).
   D. Quality control sample raw data and sample raw data.*

GC

I. Initial Calibration Data
   A. Initial calibration summary, analysis report, and chromatograms for each column used in analysis.
II. Sample Data
   A. Preparation logs (when applicable) and run log pages.
   B. Bracketing continuing calibration standards (when applicable).
   C. Quality control sample raw data and sample raw data.**

Metals

I. Preparation Logs
II. ICP and/or ICP/MS Data
   A. Computer printouts listing all calibrations.
   B. Quality control sample raw data and sample raw data.
III. GFAA and/or CVAA Raw Data
   A. Analysis bench sheets listing all calibrations.
   B. Quality control sample raw data and sample raw data.

Wet Chemistry

I. Preparation Logs
II. Sample Data
   A. Analysis bench sheets listing all calibration.
   B. Quality control sample raw data and sample raw data.

* Raw data includes the target compound report, IS summary, surrogate recovery report, chromatograms (RIC), spectra, and Tentatively Identified Compound (TIC) report with library searches (when applicable).

** Raw data includes the analysis report and chromatograms for each column.

Sample Data

Metals—Supporting Documentation

D9A130168

Roy F. Weston

ICPMS Standard and Spike True Values

Element	Calibration Standard	Initial Calibration Verification	Continuing Calibration Verification	Interference Check Sample A	Interference Check Sample AB	Duplicate Control Sample	Matrix Spike	Matrix Spike Duplicate	Post Digestion Spike
Antimony	100	200	100	100000 Aluminum	Solution A with required elements spiked at 100 ug/L	100	100	100	100
Arsenic	100	200	100	100000 Calcium		100	100	100	100
Barium	100	200	100	100000 Iron		100	100	100	100
Berylium	100	200	100	100000 Magnesium		100	100	100	100
Cadmium	100	200	100	100000 Sodium		100	100	100	100
Chromium	100	200	100	100000 Phosphorous		100	100	100	100
Cobalt	100	200	100	100000 Potassium		100	100	100	100
Copper	100	200	100	100000 Sulfur		100	100	100	100
Lead	100	200	100	200000 Carbon		100	100	100	100
Manganese	100	200	100	1000000 Chloride		100	100	100	100
Iron	5000	5000	5000	2000 Molybdenum		5000	5000	5000	5000
Molybdenum	100	400	100	2000 Titanium		100	100	100	100
Nickel	100	200	100			100	100	100	100
Selenium	100	200	100			100	100	100	100
Silver	100	200	100			100	100	100	100
Tin	100	200	100			100	100	100	100
Thallium	100	200	100			100	100	100	100
Uranium	100	200	100			100	100	100	100
Vanadium	100	200	100			100	100	100	100
Zinc	100	200	100			100	100	100	100

All units are in ug/L

Elan 6000 ICPMS IDL

Forth Quarter 1998

Analyte	11/17/98 SD	11/25/98 SD	12/11/98 SD	IDL	RL
Be	0.003173	0.005926	0.004861	**0.0140**	1
Al	0.037362	0.048848	0.076229	**0.1624**	50
V	0.010648	0.007003	0.011311	**0.0290**	5
Cr	0.019041	0.019143	0.021804	**0.0600**	1
Mn	0.005322	0.003507	0.003494	**0.0123**	1
Fe	1.357894	0.428796	1.21785	**3.0045**	50
Co	0.000872	0.000962	0.000621	**0.0025**	1
Ni	0.016641	0.009053	0.041204	**0.0669**	1
Cu	0.048306	0.020626	0.083967	**0.1529**	1
Zn	0.051766	0.051956	0.102599	**0.2063**	10
As	0.023543	0.03635	0.021912	**0.0818**	5
Se	0.063753	0.123541	0.072927	**0.2602**	5
Mo	0.005083	0.009488	0.002699	**0.0173**	1
Ag	0.005401	0.003904	0.00197	**0.0113**	1
Cd	0.003195	0.003322	0.001799	**0.0083**	1
Sn	0.061825	0.036971	0.020043	**0.1188**	10
Sb	0.080931	0.057883	0.031712	**0.1705**	1
Ba	0.0041	0.004183	0.004369	**0.0127**	1
Tl	0.001465	0.001523	0.000983	**0.0040**	1
Pb	0.004466	0.024925	0.006233	**0.0356**	1
U	0.00076	0.00045	0.000712	**0.0019**	1

Units are ug/L

ICPMS Standards and Spiking Solutions

Method 6020

Calibration Standards

Inorganic Ventures Cal - 1 Verification # 11691
Expires 8/99 250uL to 50mL

Inorganic Ventures Cal - 2 Verification # 11513
Expires 8/99 250uL to 50mL

Initial Calibration Verification

Spex Instrument Check Standard 1 Verification # 11505
Expires 3/99 200uL to 10mL

Spex Instrument Check Standard 4 Verification # 11506
Expires 3/99 200uL to 10mL

Spex Instrument Check Standard 5 Verification # 11507
Expires 3/99 200uL to 10mL

Quality Control Standards

QC Std. 1 = Initial Calibration Verification (ICV)

QC Std. 2 = Initial Calibration Blank (ICB)

QC Std. 3 = Continuing Calibration Verification (CCV)

QC Std. 4 = Continuing Calibration Blank (CCB)

QC Std 5 = Continuing Calibration Blank (Final)

RQC057 Quanterra Incorporated Run Date: 1/15/99
METALS PREP LOG/BATCH SUMMARY Time: 14:04:40

BATCH NUMBER: 9014239 PREP DATE: 1/18/99
DUE DATE 2/01/99 INITIALS: ALG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
*D9A130168 SOLID	CPX4K TO DUE DATE:	01	X .53 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX4N TO DUE DATE:	01	X .99 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX4R TO DUE DATE:	01	X .98 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX4X TO DUE DATE:	01	X .98 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX51 TO DUE DATE:	01	X 1.01 g 2/01/99	____g	____g	____g
*D9A130168 SOLID	CPX52 TO DUE DATE:	01	X .44 g 2/01/99	____g	____g	____g
*D9A130168 SOLID	CPX53 TO DUE DATE:	01	X .50 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX54 TO DUE DATE:	01	X 1.03 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX55 TO DUE DATE:	01	X 1.02 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX56 TO DUE DATE:	01	X 1.03 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX57 TO DUE DATE:	01	X .98 g 2/01/99	____g	____g	____g
D9A130168 SOLID	CPX58 TO DUE DATE:	01	X 1.02 g 2/01/99	____g	____g	____g
	CPX58S		1.02 g	____g	____g	____g
	CPX58X		.99 g	____g	____g	____g
D9A130168 SOLID	CPX5K TO DUE DATE:	01	X 1.03 g 2/01/99	____g	____g	____g
D9A140000 SOLID	CQOCTB DUE DATE:	01	X 1.00 g 0/00/00	____g	____g	____g
	CQOCTC		1.00 g	____g	____g	____g

RQC057 Quanterra Incorporated Run Date: 1/15/99
METALS PREP LOG/BATCH SUMMARY Time: 14:04:40

BATCH NUMBER: 9014239 PREP DATE: 1/18/99
DUE DATE 2/01/99 INITIALS: AMG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
	CQ0CTL		1.00 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: *Reduced Sample Vol./Final vol. will be 50g/All other samples brought to 100g final vol.
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

AG AS BA CO CR MN NI PB SB SE TL VX

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	___	___

Instrument Upload Run Log - Page 1
Started Thu Feb 4 11:52:18 1999 by ROBERTSD
Data File: UPL$DEN_DATA_ROOT:<REP>020299.REP;1

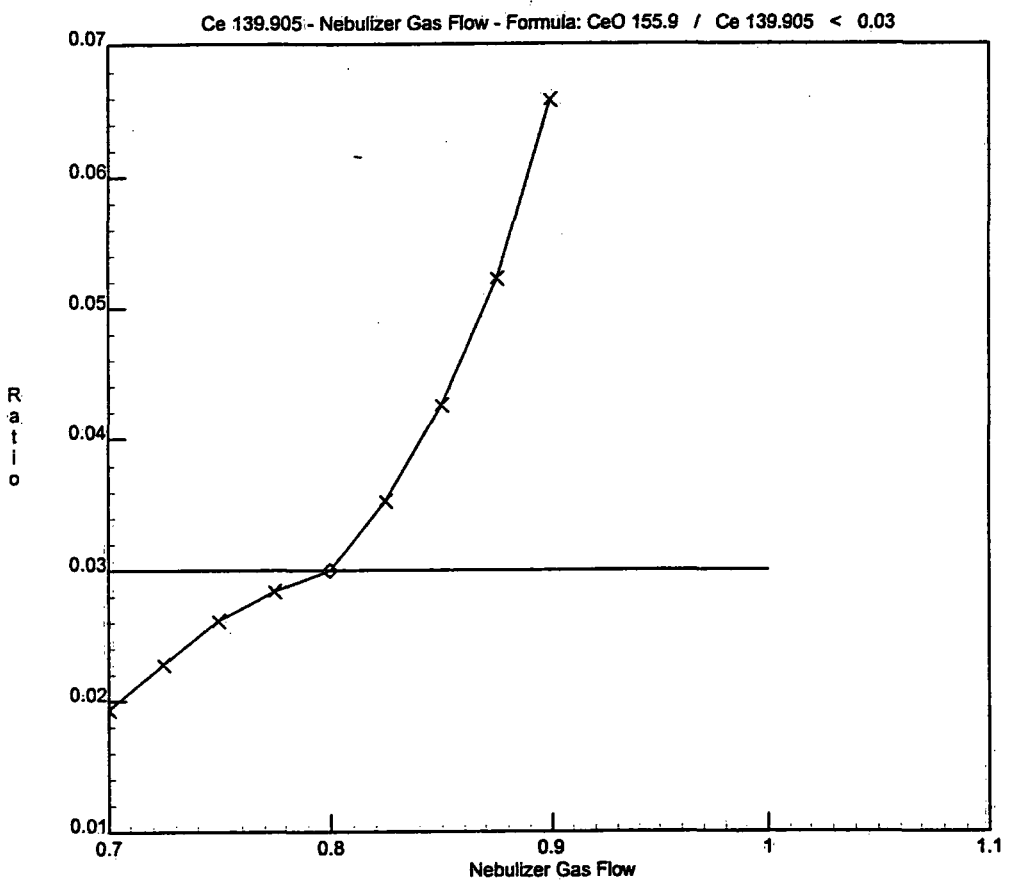
#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	BLANK		02-FEB-1999	09:05			004
2	STANDARD 1		02-FEB-1999	09:09:29			004
3	QC STD 1		02-FEB-1999	09:14:13			004
4	QC STD 2		02-FEB-1999	09:18:54			004
5	ICSA		02-FEB-1999	09:23:23			004
6	ICSAB		02-FEB-1999	09:29:33			004
7	BLANK		02-FEB-1999	09:34:00			004
8	QC STD 3		02-FEB-1999	09:38:46			004
9	QC STD 5		02-FEB-1999	09:43:31			004
10	BLANK		02-FEB-1999	09:47:56			004
11	STANDARD 1		02-FEB-1999	09:52:21			004
12	QC STD 3		02-FEB-1999	09:57:07			004
13	QC STD 4		02-FEB-1999	10:01:50			004
14	CQ0CTB		02-FEB-1999	10:06:14	9014239	D9A140000	004
15	CQ0CTC		02-FEB-1999	10:10:41	9014239	D9A140000	004
16	CQ0CTL		02-FEB-1999	10:15:06	9014239	D9A140000	004
17	CPX4K		02-FEB-1999	10:19:32	9014239	D9A130168	004
18	CPX4N		02-FEB-1999	10:23:58	9014239	D9A130168	004
19	CPX4R		02-FEB-1999	10:28:27	9014239	D9A130168	004
20	CPX4X		02-FEB-1999	10:32:56	9014239	D9A130168	004
21	QC STD 3		02-FEB-1999	10:37:41			004
22	QC STD 4		02-FEB-1999	10:42:31			004
23	BLANK		02-FEB-1999	10:46:58			004
24	STANDARD 1		02-FEB-1999	10:51:27			004
25	QC STD 3		02-FEB-1999	10:56:13			004
26	QC STD 4		02-FEB-1999	11:01:00			004
27	CPX51		02-FEB-1999	11:05:28	9014239	D9A130168	004
28	CPX52		02-FEB-1999	11:09:57	9014239	D9A130168	004
29	CPX53		02-FEB-1999	11:14:25	9014239	D9A130168	004
30	CPX54		02-FEB-1999	11:18:54	9014239	D9A130168	004
31	CPX55		02-FEB-1999	11:23:24	9014239	D9A130168	004
32	CPX56		02-FEB-1999	11:27:54	9014239	D9A130168	004
33	CPX57		02-FEB-1999	11:32:26	9014239	D9A130168	004
34	QC STD 3		02-FEB-1999	11:37:15			004
35	QC STD 4		02-FEB-1999	11:42:49			004
36	CPX58		02-FEB-1999	11:47:37	9014239	D9A130168	004
37	CPX58	L	02-FEB-1999	11:52:09			004
38	CPX58	PDS	02-FEB-1999	11:56:38			004
39	CPX58S		02-FEB-1999	12:01:02	9014239	D9A130168	004
40	CPX58X		02-FEB-1999	12:05:27	9014239	D9A130168	004
41	CPX5K		02-FEB-1999	12:09:52	9014239	D9A130168	004
42	QC STD 3		02-FEB-1999	12:14:38			004
43	QC STD 4		02-FEB-1999	12:22:46			004
44	BLANK		02-FEB-1999	12:29:28			004

(continued)

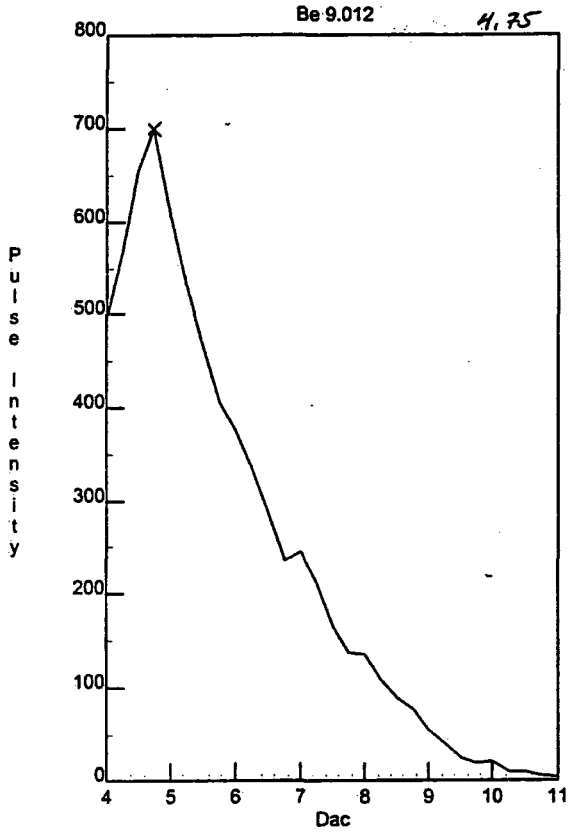
#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	STANDARD 1		02-FEB-1999	12:33:59			004
46	QC STD 3		02-FEB-1999	12:38:43			004
47	QC STD 4		02-FEB-1999	12:43:25			004
48	CPX4K	10	02-FEB-1999	12:47:50	9014239	D9A130168	004
49	CPX4N	10	02-FEB-1999	12:52:14	9014239	D9A130168	004
50	CPX4R	10	02-FEB-1999	12:56:39	9014239	D9A130168	004
51	CPX4X	10	02-FEB-1999	13:01:04	9014239	D9A130168	004
52	CPX51	10	02-FEB-1999	13:05:29	9014239	D9A130168	004
53	CPX52	10	02-FEB-1999	13:09:56	9014239	D9A130168	004
54	CPX53	20	02-FEB-1999	13:14:22	9014239	D9A130168	004
55	CPX54	20	02-FEB-1999	13:18:48	9014239	D9A130168	004
56	QC STD 3		02-FEB-1999	13:23:33			004
57	QC STD 4		02-FEB-1999	13:28:17			004
58	CPX55	10	02-FEB-1999	13:32:44	9014239	D9A130168	004
59	CPX56	5	02-FEB-1999	13:37:13	9014239	D9A130168	004
60	CPX57	10	02-FEB-1999	13:41:43	9014239	D9A130168	004
61	~~CPX58~~	5	02-FEB-1999	13:46:11	9014239	D9A130168	004
62	CPX58 L		02-FEB-1999	13:50:44			004
63	CPX58 PDS	5	02-FEB-1999	13:55:14			004
64	CPX58S	5	02-FEB-1999	13:59:44	9014239	D9A130168	004
65	~~CPX58X~~	5	02-FEB-1999	14:04:16	9014239	D9A130168	004
66	CPX5K	5	02-FEB-1999	14:08:44	9014239	D9A130168	004
67	QC STD 3		02-FEB-1999	14:13:30			004
68	QC STD 5		02-FEB-1999	14:18:14			004
69	CPX58	10	02-FEB-1999	14:23:38	9014239	D9A130168	004
70	CPX58 L		02-FEB-1999	14:28:03			004
71	CPX58 PDS		02-FEB-1999	14:32:28			004
72	CPX58S	10	02-FEB-1999	14:36:53	9014239	D9A130168	004
73	CPX58X	10	02-FEB-1999	14:41:19	9014239	D9A130168	004
74	QC STD 3		02-FEB-1999	14:46:03			004
75	QC STD 5		02-FEB-1999	14:50:46			004

not used

End of Report


Ce 139.905 - Nebulizer Gas Flow - Formula: CeO 155.9 / Ce 139.905 < 0.03
0.07
0.06
0.05
0.04
0.03
0.02
0.01
Ratio
0.7
0.8
0.9
1
1.1
Nebulizer Gas Flow

$N_{eb} = 0.80$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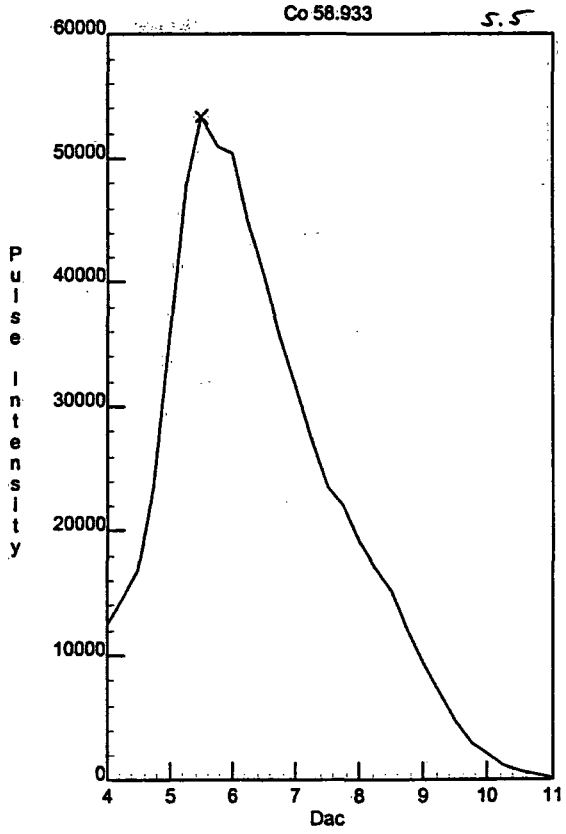
Pulse Intensity
Dac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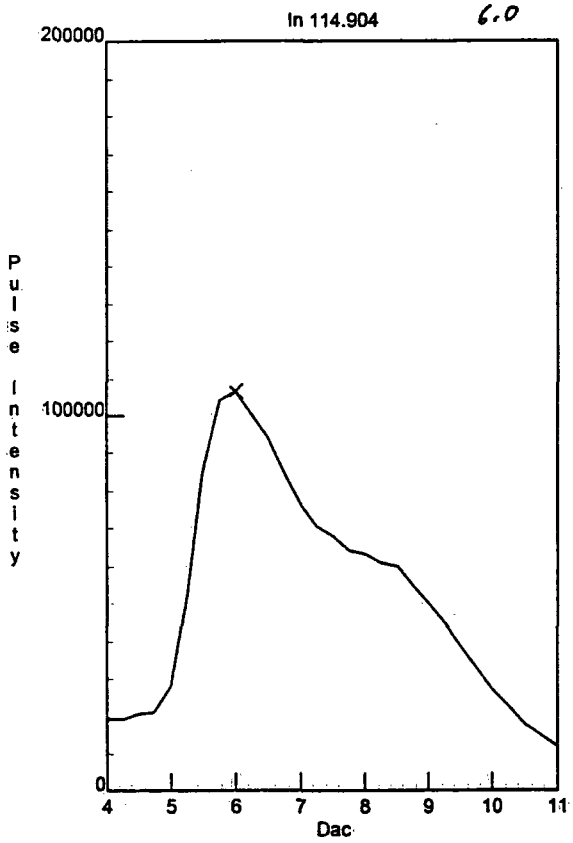
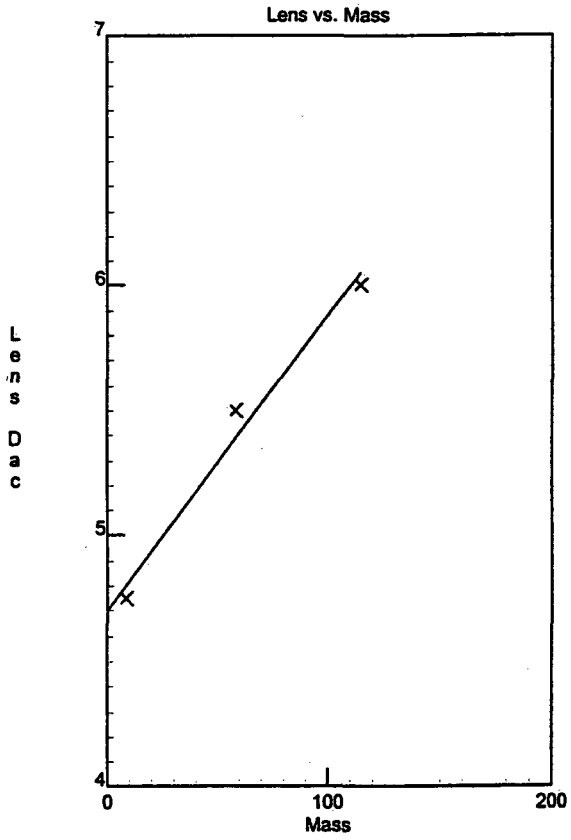
Pulse Intensity
Dac

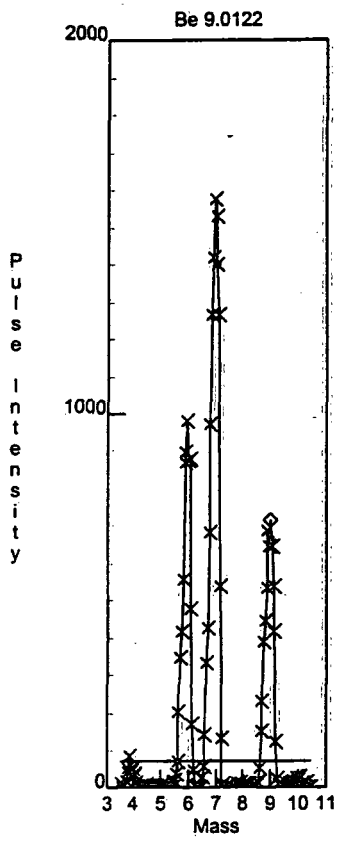

In 114.904
6.0
Pulse Intensity
Dac

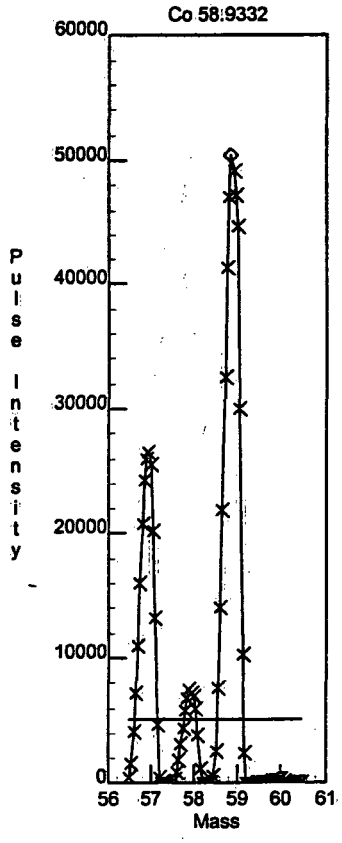

Lens vs. Mass
Lens Dac
Mass

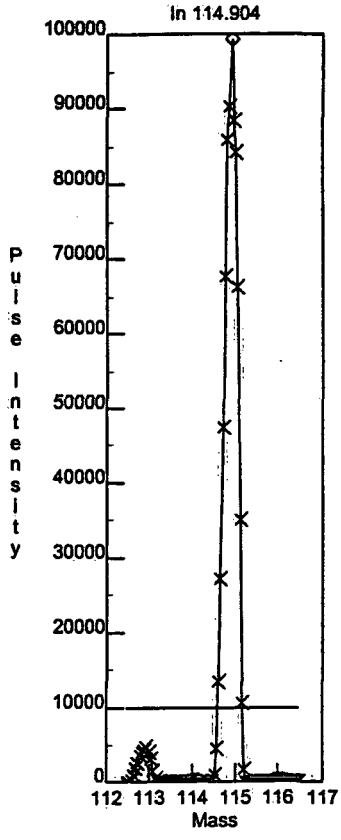
Instrument Tuning Report

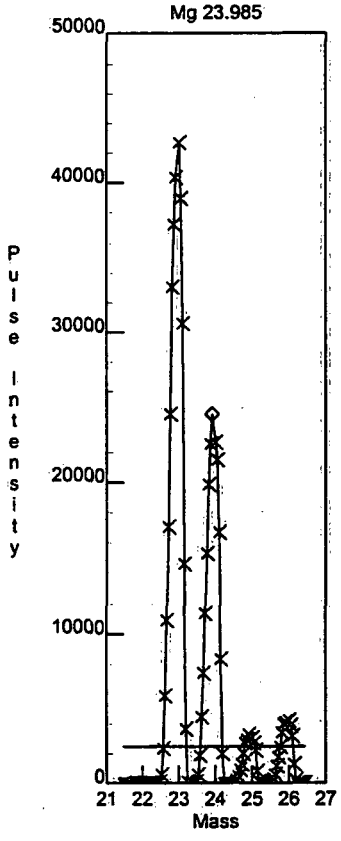
File Name: q_tune.tun
File Path: c:\elandata\Tuning

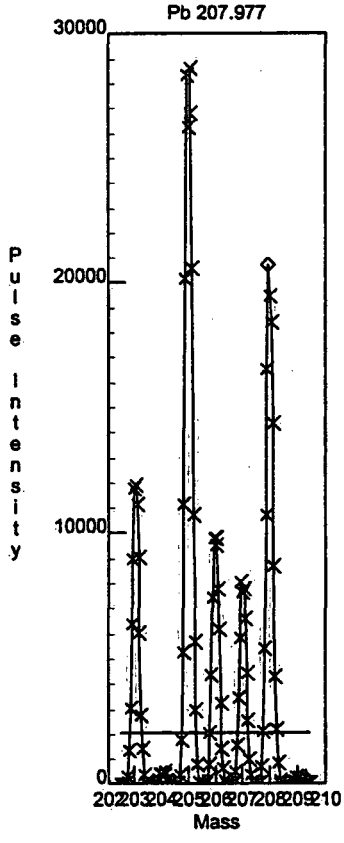
Analyte	Exact Mass	Meas. Mass	Mass DAC	Meas. Pk. Width	Res. DAC	Custom Res.
Li	7.016	6.954	1538	0.586	2164	
Be	9.012	9.003	2026	0.614	2170	
Mg	23.985	23.952	5663	0.587	2285	
Co	58.933	58.854	14168	0.605	2495	
Rh	102.905	102.901	24899	0.563	2785	
In	114.904	114.904	27823	0.571	2860	
Tl	204.975	205.050	49761	0.534	3496	
Pb	207.977	207.952	50475	0.507	3523	
U	238.050	238.054	57781	0.529	3784	

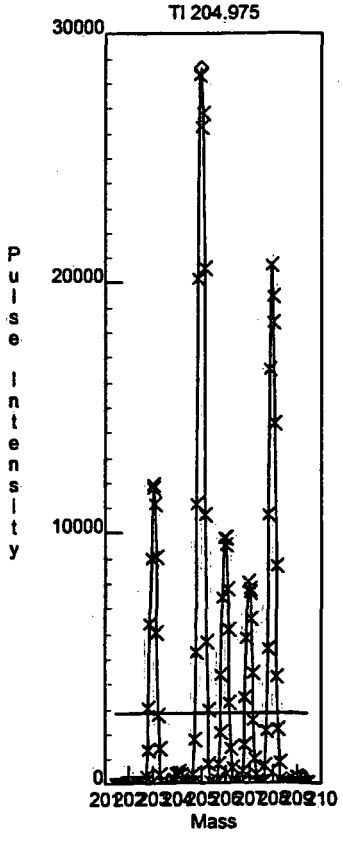

Be 9.0122
Pulse Intensity
2000
1000
0
3 4 5 6 7 8 9 10 11
Mass


Co 58.9332
Pulse Intensity
60000
50000
40000
30000
20000
10000
0
56 57 58 59 60 61
Mass


In 114.904
Pulse Intensity
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
112 113 114 115 116 117
Mass


Mg 23.985
Pulse Intensity
50000
40000
30000
20000
10000
0
21 22 23 24 25 26 27
Mass


Pb 207.977
Pulse Intensity
30000
20000
10000
0
Mass


Tl 204.975
Pulse Intensity
30000
20000
10000
0
Mass

Daily Performance Report

Sample ID: CLP Tuning Solution
Sample Date/Time: Tuesday, February 02, 1999 08:51:55
Sample Description:
Sample File: C:\elandata\Sample\Q-Daily.sam
Method File: C:\elandata\Method\Q-Daily.mth
Dataset File: c:\elandata\dataset\020299\CLP Tuning Solution.002
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Number of Replicates: 6
Dual Detector Mode: Dual

Summary

	Analyte	Mass	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9	672.349	12.026	1.789
	Mg	24	23258.142	247.848	1.066
	Rh	103	102751.783	912.872	0.888
	Pb	208	22926.271	172.617	0.753
>	Ba	138	63375.640	508.498	0.802
	Ba++	69	0.021	0.000	1.758
>	Ce	140	72591.027	524.131	0.722
	CeO	156	0.033	0.000	1.169
	Bkgd	220	5.278	1.569	29.736

Dual Detector Gains

Mass	Gain
9	10067
23	10471
27	9291
37	8907
39	8588
51	8267
52	8057
54	7701
55	7796
58	7213
59	7426
63	6924
66	6886
75	7189
82	6951
98	7390
107	6665
114	6583
115	6405
121	6685
135	6496
205	6031

208	6030
232	5991
238	5988

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Blank

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:05:05
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Blank.003
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77626.142	ug/L	
⌜	Be	9			5.667	ug/L	
|	Al	27			5588.268	ug/L	
|>	Sc	45			276293.119	ug/L	
|	V	51			2815.975	ug/L	
|	Cr	52			12763.827	ug/L	
|	Mn	55			2457.570	ug/L	
|	Fe	57			28925.387	ug/L	
|	Co	59			183.003	ug/L	
|	Ni	60			316.293	ug/L	
⌞	Cu	65			211.303	ug/L	
⌜>	Ge	72			545040.009	ug/L	
|	Zn	68			113.668	ug/L	
|	As	75			-145.996	ug/L	
⌞	Se	82			-11.137	ug/L	
	Y	89			375598.358	ug/L	
⌜	Mo	97			96.668	ug/L	
|	Ag	107			56.001	ug/L	
|>	In	115			431482.203	ug/L	
|	Cd	111			18.140	ug/L	
|	Sn	117			73.334	ug/L	
|	Sb	121			72.334	ug/L	
⌞	Ba	135			22.334	ug/L	
	Tb	159			272787.563	ug/L	
⌜>	Ho	165			245296.396	ug/L	
|	Tl	205			143.336	ug/L	
|	Pb	208			163.669	ug/L	
⌞	U	238			49.334	ug/L	

	Bi	209	136945.750	ug/L
⌈>	Sc	45	276293.119	ug/L
|	Cr	50	369.770	ug/L
⌊	Cr	53	1849.805	ug/L
⌈	Ni	61	1391.082	ug/L
|	Cu	63	368.342	ug/L
|	Br	79	372.009	ug/L
⌊>	Ge	74	762403.598	ug/L
⌈	Ag	109	48.334	ug/L
⌊>	In	115	431482.203	ug/L
⌈	Pb	206	52.001	ug/L
|	Pb	207	42.667	ug/L
⌊>	Bi	209	136945.750	ug/L
	Hg	200	21.000	ug/L
	Pd	106	261.215	ug/L
	Kr	83	169.003	ug/L
	Ti	48	-1931.777	ug/L
	Ca	44	31786.313	ug/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Standard 1

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:09:29
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Standard 1.004
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 2
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79803.127	ug/L	77626.142
⌜	Be	9			6559.905	ug/L	5.667
|	Al	27			200605.186	ug/L	5588.268
|>	Sc	45			282673.752	ug/L	276293.119
|	V	51			441897.762	ug/L	2815.975
|	Cr	52			404018.943	ug/L	12763.827
|	Mn	55			652469.237	ug/L	2457.570
|	Fe	57			700351.436	ug/L	28925.387
|	Co	59			526746.969	ug/L	183.003
|	Ni	60			114022.574	ug/L	316.293
⌞	Cu	65			122001.805	ug/L	211.303
⌜>	Ge	72			552296.028	ug/L	545040.009
|	Zn	68			45811.859	ug/L	113.668
|	As	75			91569.496	ug/L	-145.996
⌞	Se	82			8529.266	ug/L	-11.137
	Y	89			378812.729	ug/L	375598.358
⌜	Mo	97			105728.191	ug/L	96.668
|	Ag	107			355984.852	ug/L	56.001
|>	In	115			432051.730	ug/L	431482.203
|	Cd	111			86420.642	ug/L	18.140
|	Sn	117			76159.291	ug/L	73.334
|	Sb	121			284278.934	ug/L	72.334
⌞	Ba	135			57037.241	ug/L	22.334
	Tb	159			276858.100	ug/L	272787.563
⌜>	Ho	165			250297.856	ug/L	245296.396
|	Tl	205			329724.360	ug/L	143.336
|	Pb	208			422972.113	ug/L	163.669
⌞	U	238			344795.833	ug/L	49.334

	Bi	209	137725.926	ug/L	136945.750
⌈>	Sc	45	282673.752	ug/L	276293.119
|	Cr	50	17931.769	ug/L	369.770
L	Cr	53	50529.716	ug/L	1849.805
⌈	Ni	61	6482.202	ug/L	1391.082
|	Cu	63	257775.843	ug/L	368.342
|	Br	79	372.009	ug/L	372.009
L>	Ge	74	758190.034	ug/L	762403.598
⌈	Ag	109	334558.911	ug/L	48.334
L>	In	115	432051.730	ug/L	431482.203
⌈	Pb	206	112628.131	ug/L	52.001
|	Pb	207	93349.715	ug/L	42.667
L>	Bi	209	137725.926	ug/L	136945.750
	Hg	200	22.000	ug/L	21.000
	Pd	106	302.631	ug/L	261.215
	Kr	83	168.669	ug/L	169.003
	Ti	48	-1407.131	ug/L	-1931.777
	Ca	44	32709.404	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 1

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:14:13
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 1.005
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 9
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78235.829	ug/L	77626.142
⌜	Be	9	195.6684	3.61	12910.964	ug/L	5.667
|	Al	27	189.4875	1.46	377494.947	ug/L	5588.268
|>	Sc	45			284681.748	ug/L	276293.119
|	V	51	201.9839	5.65	895093.705	ug/L	2815.975
|	Cr	52	204.0982	5.92	815865.393	ug/L	12763.827
|	Mn	55	193.5719	2.86	1268822.014	ug/L	2457.570
|	Fe	57	4822.5165	4.49	680542.307	ug/L	28925.387
|	Co	59	194.2187	5.14	1028555.371	ug/L	183.003
|	Ni	60	199.2787	5.19	228162.687	ug/L	316.293
⌞	Cu	65	202.7237	3.86	248576.497	ug/L	211.303
⌜>	Ge	72			552113.305	ug/L	545040.009
|	Zn	68	204.3461	1.12	93457.342	ug/L	113.668
|	As	75	197.6989	2.81	181032.655	ug/L	-145.996
⌞	Se	82	208.3641	2.83	17781.643	ug/L	-11.137
	Y	89			420874.335	ug/L	375598.358
⌜	Mo	97	426.5364	1.37	434165.477	ug/L	96.668
|	Ag	107	205.6535	1.43	705196.530	ug/L	56.001
|>	In	115			416185.552	ug/L	431482.203
|	Cd	111	205.5953	0.68	171151.458	ug/L	18.140
|	Sn	117	203.7738	0.95	149400.756	ug/L	73.334
|	Sb	121	207.0570	0.53	566924.950	ug/L	72.334
⌞	Ba	135	206.6038	1.57	113467.986	ug/L	22.334
	Tb	159			268348.635	ug/L	272787.563
⌜>	Ho	165			245377.223	ug/L	245296.396
|	Tl	205	207.6951	1.22	671570.096	ug/L	143.336
|	Pb	208	203.9721	1.56	845938.696	ug/L	163.669
⌞	U	238	210.4731	2.90	711498.627	ug/L	49.334

	Bi	209			136732.621	ug/L	136945.750
⌈>	Sc	45			284681.748	ug/L	276293.119
|	Cr	50	253.3394	5.94	45138.269	ug/L	369.770
L	Cr	53	202.5061	5.20	100978.200	ug/L	1849.805
⌈	Ni	61	198.1111	1.08	11746.278	ug/L	1391.082
|	Cu	63	201.1507	0.72	529932.292	ug/L	368.342
|	Br	79			412.010	ug/L	372.009
L>	Ge	74			775512.790	ug/L	762403.598
⌈	Ag	109	203.8469	1.87	656783.662	ug/L	48.334
L>	In	115			416185.552	ug/L	431482.203
⌈	Pb	206	205.1183	0.91	229313.082	ug/L	52.001
|	Pb	207	198.2745	1.34	183703.452	ug/L	42.667
L>	Bi	209			136732.621	ug/L	136945.750
	Hg	200			24.000	ug/L	21.000
	Pd	106			900.709	ug/L	261.215
	Kr	83			169.669	ug/L	169.003
	Ti	48			682686.635	ug/L	-1931.777
	Ca	44			37963.761	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	97.834			
|	Al	27	94.744			
|>	Sc	45		103.036		
|	V	51	100.992			
|	Cr	52	102.049			
|	Mn	55	96.786			
|	Fe	57	96.450			
|	Co	59	97.109			
|	Ni	60	99.639			
⌊	Cu	65	101.362			
⌈>	Ge	72		101.298		
|	Zn	68	102.173			
|	As	75	98.849			
⌊	Se	82	104.182			
	Y	89				
⌈	Mo	97	106.634			
|	Ag	107	102.827			
|>	In	115		96.455		
|	Cd	111	102.798			
|	Sn	117	101.887			
|	Sb	121	103.528			
⌊	Ba	135	103.302			
	Tb	159				
⌈>	Ho	165		100.033		
|	Tl	205	103.848			
|	Pb	208	101.986			
⌊	U	238	105.237			
	Bi	209				
⌈>	Sc	45		103.036		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.719		
⌈	Ag	109				
⌊>	In	115		96.455		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		99.844		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 2

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:18:54
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 2.006
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79051.912	ug/L	77626.142
⌜	Be	9	0.0083	381.39	6.333	ug/L	5.667
|	Al	27	0.5061	423.77	6678.351	ug/L	5588.268
|>	Sc	45			281968.936	ug/L	276293.119
|	V	51	-0.0596	21.51	2612.335	ug/L	2815.975
|	Cr	52	-0.2278	40.45	12132.272	ug/L	12763.827
|	Mn	55	-0.0329	46.89	2293.207	ug/L	2457.570
|	Fe	57	-10.5791	92.21	28082.451	ug/L	28925.387
|	Co	59	0.0099	65.02	238.338	ug/L	183.003
|	Ni	60	-0.0104	122.67	310.759	ug/L	316.293
⌞	Cu	65	0.0120	206.68	229.949	ug/L	211.303
⌜>	Ge	72			550810.662	ug/L	545040.009
|	Zn	68	-0.0236	78.10	104.001	ug/L	113.668
|	As	75	-0.0191	495.29	-164.560	ug/L	-145.996
⌞	Se	82	0.2476	77.02	9.644	ug/L	-11.137
	Y	89			371752.020	ug/L	375598.358
⌜	Mo	97	0.2966	10.81	388.676	ug/L	96.668
|	Ag	107	0.1287	20.03	487.013	ug/L	56.001
|>	In	115			409738.055	ug/L	431482.203
|	Cd	111	0.0138	27.71	28.556	ug/L	18.140
|	Sn	117	0.1585	19.42	184.003	ug/L	73.334
|	Sb	121	0.9259	33.53	2557.270	ug/L	72.334
⌞	Ba	135	0.0126	18.50	28.000	ug/L	22.334
	Tb	159			263993.981	ug/L	272787.563
⌜>	Ho	165			242130.879	ug/L	245296.396
|	Tl	205	0.0020	219.15	148.002	ug/L	143.336
|	Pb	208	0.0081	84.23	194.669	ug/L	163.669
⌞	U	238	0.0398	21.46	181.670	ug/L	49.334

	Bi	209			134911.061	ug/L	136945.750
⌈>	Sc	45			281968.936	ug/L	276293.119
|	Cr	50	0.0160	256.03	380.210	ug/L	369.770
L	Cr	53	-0.3662	8.77	1710.120	ug/L	1849.805
⌈	Ni	61	-0.2225	392.55	1397.416	ug/L	1391.082
|	Cu	63	0.0161	89.27	414.677	ug/L	368.342
|	Br	79			360.342	ug/L	372.009
L>	Ge	74			772184.161	ug/L	762403.598
⌈	Ag	109	0.1278	26.32	450.345	ug/L	48.334
L>	In	115			409738.055	ug/L	431482.203
⌈	Pb	206	0.0064	128.17	58.334	ug/L	52.001
|	Pb	207	-0.0004	3148.68	41.667	ug/L	42.667
L>	Bi	209			134911.061	ug/L	136945.750
	Hg	200			23.667	ug/L	21.000
	Pd	106			256.474	ug/L	261.215
	Kr	83			156.002	ug/L	169.003
	Ti	48			-1774.258	ug/L	-1931.777
	Ca	44			30620.423	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		102.054		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		101.059		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		94.961		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.710		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		102.054		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.283		
⌈	Ag	109				
⌊>	In	115		94.961		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.514		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: ICSA

Sample Description: ICSA
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:23:23
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\ICSA.007
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 6
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77609.394	ug/L	77626.142
⌈	Be	9	0.0085	294.79	6.333	ug/L	5.667
|	Al	27	90704.2794	2.26	176697726.290	ug/L	5588.268
|>	Sc	45			282649.120	ug/L	276293.119
|	V	51	-1.9053	14.83	-5465.213	ug/L	2815.975
|	Cr	52	9.6920	6.48	50911.112	ug/L	12763.827
|	Mn	55	4.7661	2.80	33478.187	ug/L	2457.570
|	Fe	57	104592.3954	6.00	14049512.265	ug/L	28925.387
|	Co	59	0.7067	4.19	3906.240	ug/L	183.003
|	Ni	60	3.3475	5.64	4128.007	ug/L	316.293
L	Cu	65	1.2944	10.47	1792.408	ug/L	211.303
⌈>	Ge	72			555910.335	ug/L	545040.009
|	Zn	68	2.3484	4.44	1195.062	ug/L	113.668
|	As	75	-0.3811	46.15	-502.283	ug/L	-145.996
L	Se	82	-0.5510	32.72	-58.506	ug/L	-11.137
	Y	89			369485.341	ug/L	375598.358
⌈	Mo	97	2207.2185	1.30	2107484.877	ug/L	96.668
|	Ag	107	0.1398	19.82	499.681	ug/L	56.001
|>	In	115			390383.404	ug/L	431482.203
|	Cd	111	-0.0467	461.80	-21.979	ug/L	18.140
|	Sn	117	0.2218	9.78	218.671	ug/L	73.334
|	Sb	121	1.7882	4.61	4655.472	ug/L	72.334
L	Ba	135	0.9116	2.77	489.680	ug/L	22.334
	Tb	159			258421.109	ug/L	272787.563
⌈>	Ho	165			236282.772	ug/L	245296.396
|	Tl	205	0.0125	93.02	177.003	ug/L	143.336
|	Pb	208	1.2917	1.05	5315.764	ug/L	163.669
L	U	238	0.0065	82.89	69.001	ug/L	49.334

	Bi	209			126733.292	ug/L	136945.750
⌈>	Sc	45			282649.120	ug/L	276293.119
|	Cr	50	151.1052	23.61	26861.956	ug/L	369.770
L	Cr	53	57.8948	7.67	30017.525	ug/L	1849.805
⌈	Ni	61	84.6759	4.31	5679.854	ug/L	1391.082
|	Cu	63	3.4296	3.02	9162.366	ug/L	368.342
|	Br	79			8123.063	ug/L	372.009
L>	Ge	74			755388.486	ug/L	762403.598
⌈	Ag	109	0.1442	20.46	478.680	ug/L	48.334
L>	In	115			390383.404	ug/L	431482.203
⌈	Pb	206	1.3245	3.22	1420.418	ug/L	52.001
|	Pb	207	1.3251	2.13	1177.394	ug/L	42.667
L>	Bi	209			126733.292	ug/L	136945.750
	Hg	200			38.667	ug/L	21.000
	Pd	106			-111.798	ug/L	261.215
	Kr	83			288.006	ug/L	169.003
	Ti	48			7337136.621	ug/L	-1931.777
	Ca	44			12160615.407	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		102.300		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		101.994		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		90.475		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		96.325		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		102.300		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		99.080		
⌈	Ag	109				
⌊>	In	115		90.475		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		92.543		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: ICSA*B*

Sample Description: ICSAB
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:29:33
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\ICSA.008
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 7
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77518.246	ug/L	77626.142
⌜	Be	9	96.6401	2.51	6273.107	ug/L	5.667
|	Al	27	88452.2568	3.77	170603268.625	ug/L	5588.268
|>	Sc	45			279749.028	ug/L	276293.119
|	V	51	101.3382	2.54	443244.285	ug/L	2815.975
|	Cr	52	108.7208	0.61	433606.228	ug/L	12763.827
|	Mn	55	102.1180	1.01	659298.322	ug/L	2457.570
|	Fe	57	100422.5445	1.68	13361546.471	ug/L	28925.387
|	Co	59	96.3661	1.90	502271.178	ug/L	183.003
|	Ni	60	97.0152	2.31	109461.801	ug/L	316.293
⌞	Cu	65	91.8176	2.08	110855.949	ug/L	211.303
⌜>	Ge	72			558375.499	ug/L	545040.009
|	Zn	68	96.3251	1.91	44619.697	ug/L	113.668
|	As	75	98.5636	2.11	91233.402	ug/L	-145.996
⌞	Se	82	102.1357	1.70	8812.378	ug/L	-11.137
	Y	89			371742.032	ug/L	375598.358
⌜	Mo	97	2263.9633	1.82	2114104.488	ug/L	96.668
|	Ag	107	97.9931	1.13	308386.664	ug/L	56.001
|>	In	115			381889.870	ug/L	431482.203
|	Cd	111	99.9636	1.14	76362.620	ug/L	18.140
|	Sn	117	103.0223	0.68	69345.274	ug/L	73.334
|	Sb	121	104.4737	1.49	262503.731	ug/L	72.334
⌞	Ba	135	103.1518	0.37	52002.672	ug/L	22.334
	Tb	159			256066.138	ug/L	272787.563
⌜>	Ho	165			233807.461	ug/L	245296.396
|	Tl	205	97.2283	1.69	299642.897	ug/L	143.336
|	Pb	208	99.5651	1.33	393591.821	ug/L	163.669
⌞	U	238	105.1762	1.88	338899.752	ug/L	49.334

	Bi	209			125459.431	ug/L	136945.750
⌈>	Sc	45			279749.028	ug/L	276293.119
|	Cr	50	261.1618	13.40	45759.167	ug/L	369.770
L	Cr	53	153.1543	3.56	75611.611	ug/L	1849.805
⌈	Ni	61	173.6249	2.26	10132.026	ug/L	1391.082
|	Cu	63	95.9941	2.44	244940.887	ug/L	368.342
|	Br	79			5804.238	ug/L	372.009
L>	Ge	74			750664.044	ug/L	762403.598
⌈	Ag	109	96.7863	2.33	286175.254	ug/L	48.334
L>	In	115			381889.870	ug/L	431482.203
⌈	Pb	206	101.2741	0.10	103913.947	ug/L	52.001
|	Pb	207	101.7983	0.25	86566.367	ug/L	42.667
L>	Bi	209			125459.431	ug/L	136945.750
	Hg	200			26.334	ug/L	21.000
	Pd	106			212.856	ug/L	261.215
	Kr	83			300.673	ug/L	169.003
	Ti	48			6980764.394	ug/L	-1931.777
	Ca	44			11979407.684	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9			96.632	
|	Al	27				
|>	Sc	45		101.251		
|	V	51			103.243	
|	Cr	52			99.029	
|	Mn	55			97.352	
|	Fe	57				
|	Co	59			95.659	
|	Ni	60			93.668	
⌊	Cu	65			90.523	
⌈>	Ge	72		102.447		
|	Zn	68			93.977	
|	As	75			98.945	
⌊	Se	82			102.687	
	Y	89				
⌈	Mo	97				
|	Ag	107			97.853	
|>	In	115		88.507		
|	Cd	111			100.010	
|	Sn	117			102.800	
|	Sb	121			102.686	
⌊	Ba	135			102.240	
	Tb	159				
⌈>	Ho	165		95.316		
|	Tl	205			97.216	
|	Pb	208			98.273	
⌊	U	238			105.170	
	Bi	209				
⌈>	Sc	45		101.251		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.460		
⌈	Ag	109				
⌊>	In	115		88.507		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		91.613		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: BLANK

Sample Description: Blank Following ICSAB
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:34:00
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\BLANK.009
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79038.504	ug/L	77626.142
⌜	Be	9	0.0368	66.15	8.333	ug/L	5.667
|	Al	27	5.8822	6.38	17469.206	ug/L	5588.268
|>	Sc	45			287298.431	ug/L	276293.119
|	V	51	-0.2681	8.74	1731.584	ug/L	2815.975
|	Cr	52	-0.0624	71.21	13022.396	ug/L	12763.827
|	Mn	55	0.7904	76.55	7747.535	ug/L	2457.570
|	Fe	57	-3.0157	270.24	29656.641	ug/L	28925.387
|	Co	59	0.0063	68.78	224.004	ug/L	183.003
|	Ni	60	0.0521	16.50	389.134	ug/L	316.293
L	Cu	65	0.0806	38.47	319.168	ug/L	211.303
⌜>	Ge	72			548364.920	ug/L	545040.009
|	Zn	68	0.0094	431.43	118.668	ug/L	113.668
|	As	75	-0.0298	203.44	-174.120	ug/L	-145.996
L	Se	82	0.2920	66.40	13.609	ug/L	-11.137
	Y	89			379698.633	ug/L	375598.358
⌜	Mo	97	1.2536	38.44	1333.747	ug/L	96.668
|	Ag	107	0.0586	28.64	249.005	ug/L	56.001
|>	In	115			407031.628	ug/L	431482.203
|	Cd	111	0.0031	105.58	19.666	ug/L	18.140
|	Sn	117	0.0885	36.07	132.335	ug/L	73.334
|	Sb	121	0.6618	40.30	1832.147	ug/L	72.334
L	Ba	135	0.0073	150.62	25.000	ug/L	22.334
	Tb	159			264512.951	ug/L	272787.563
⌜>	Ho	165			239827.416	ug/L	245296.396
|	Tl	205	0.0694	25.31	359.342	ug/L	143.336
|	Pb	208	0.0578	73.13	394.340	ug/L	163.669
L	U	238	0.0203	59.28	115.335	ug/L	49.334

	Bi	209			135792.699	ug/L	136945.750
⌈>	Sc	45			287298.431	ug/L	276293.119
|	Cr	50	0.1986	56.64	419.815	ug/L	369.770
L	Cr	53	6.3664	27.49	5063.963	ug/L	1849.805
⌈	Ni	61	-0.1597	447.41	1389.748	ug/L	1391.082
|	Cu	63	0.0293	40.63	446.011	ug/L	368.342
|	Br	79			677.357	ug/L	372.009
L>	Ge	74			766025.356	ug/L	762403.598
⌈	Ag	109	0.0667	32.93	255.338	ug/L	48.334
L>	In	115			407031.628	ug/L	431482.203
⌈	Pb	206	0.0483	74.32	105.001	ug/L	52.001
|	Pb	207	0.0506	94.91	88.668	ug/L	42.667
L>	Bi	209			135792.699	ug/L	136945.750
	Hg	200			17.334	ug/L	21.000
	Pd	106			243.157	ug/L	261.215
	Kr	83			160.002	ug/L	169.003
	Ti	48			-105.301	ug/L	-1931.777
	Ca	44			33855.409	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		103.983		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		100.610		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		94.333		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		97.770		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		103.983		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		100.475		
	Ag	109				
>	In	115		94.333		
	Pb	206				
	Pb	207				
>	Bi	209		99.158		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:38:46
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.010
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77703.560	ug/L	77626.142
⌜	Be	9	96.0298	1.71	6202.409	ug/L	5.667
|	Al	27	93.5757	1.55	185236.866	ug/L	5588.268
|>	Sc	45			278383.783	ug/L	276293.119
|	V	51	103.9576	1.39	452423.861	ug/L	2815.975
|	Cr	52	103.0371	1.33	409472.652	ug/L	12763.827
|	Mn	55	99.7865	3.89	640742.462	ug/L	2457.570
|	Fe	57	4933.3584	3.34	680500.444	ug/L	28925.387
|	Co	59	101.3023	4.61	525005.948	ug/L	183.003
|	Ni	60	99.7344	2.85	111953.430	ug/L	316.293
⌞	Cu	65	100.4928	5.33	120610.053	ug/L	211.303
⌜>	Ge	72			546534.023	ug/L	545040.009
|	Zn	68	101.3786	3.07	45956.294	ug/L	113.668
|	As	75	101.6078	1.90	92063.862	ug/L	-145.996
⌞	Se	82	102.8847	0.53	8689.194	ug/L	-11.137
	Y	89			377686.655	ug/L	375598.358
⌜	Mo	97	103.2419	3.01	103495.653	ug/L	96.668
|	Ag	107	103.1873	2.50	348291.881	ug/L	56.001
|>	In	115			409697.056	ug/L	431482.203
|	Cd	111	100.6645	2.72	82476.772	ug/L	18.140
|	Sn	117	101.7299	1.36	73452.086	ug/L	73.334
|	Sb	121	102.2328	1.77	275548.676	ug/L	72.334
⌞	Ba	135	102.4898	1.65	55423.534	ug/L	22.334
	Tb	159			263615.885	ug/L	272787.563
⌜>	Ho	165			242565.804	ug/L	245296.396
|	Tl	205	101.7687	0.46	325397.366	ug/L	143.336
|	Pb	208	101.8971	0.40	417907.919	ug/L	163.669
⌞	U	238	103.4205	1.12	345743.092	ug/L	49.334

	Bi	209			134974.724	ug/L	136945.750
⌈>	Sc	45			278383.783	ug/L	276293.119
|	Cr	50	103.3687	1.30	18237.559	ug/L	369.770
L	Cr	53	105.1297	0.26	52219.851	ug/L	1849.805
⌈	Ni	61	95.0814	1.55	6280.444	ug/L	1391.082
|	Cu	63	98.0497	2.76	254792.479	ug/L	368.342
|	Br	79			515.348	ug/L	372.009
L>	Ge	74			764162.246	ug/L	762403.598
⌈	Ag	109	101.3399	2.78	321452.983	ug/L	48.334
L>	In	115			409697.056	ug/L	431482.203
⌈	Pb	206	100.6405	1.96	111077.285	ug/L	52.001
|	Pb	207	100.7526	1.36	92165.953	ug/L	42.667
L>	Bi	209			134974.724	ug/L	136945.750
	Hg	200			23.000	ug/L	21.000
	Pd	106			404.035	ug/L	261.215
	Kr	83			148.669	ug/L	169.003
	Ti	48			-1319.331	ug/L	-1931.777
	Ca	44			33228.599	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	96.030			
|	Al	27	93.576			
|>	Sc	45		100.757		
|	V	51	103.958			
|	Cr	52	103.037			
|	Mn	55	99.786			
|	Fe	57	98.667			
|	Co	59	101.302			
|	Ni	60	99.734			
⌊	Cu	65	100.493			
⌈>	Ge	72		100.274		
|	Zn	68	101.379			
|	As	75	101.608			
⌊	Se	82	102.885			
	Y	89				
⌈	Mo	97	103.242			
|	Ag	107	103.187			
|>	In	115		94.951		
|	Cd	111	100.665			
|	Sn	117	101.730			
|	Sb	121	102.233			
⌊	Ba	135	102.490			
	Tb	159				
⌈>	Ho	165		98.887		
|	Tl	205	101.769			
|	Pb	208	101.897			
⌊	U	238	103.421			
	Bi	209				
⌈>	Sc	45		100.757		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.231		
⌈	Ag	109				
⌊>	In	115		94.951		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.561		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 5

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:43:31
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 5.011
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76738.683	ug/L	77626.142
⌜	Be	9	0.0152	263.53	6.667	ug/L	5.667
|	Al	27	-0.3742	147.84	4913.255	ug/L	5588.268
|>	Sc	45			278154.796	ug/L	276293.119
|	V	51	-0.0946	41.12	2425.236	ug/L	2815.975
|	Cr	52	-0.0880	92.85	12508.933	ug/L	12763.827
|	Mn	55	0.0158	51.78	2575.258	ug/L	2457.570
|	Fe	57	-10.6303	44.83	27716.437	ug/L	28925.387
|	Co	59	0.0046	80.72	208.004	ug/L	183.003
|	Ni	60	0.0625	35.37	388.441	ug/L	316.293
L	Cu	65	0.0327	33.05	251.877	ug/L	211.303
⌜>	Ge	72			539719.033	ug/L	545040.009
|	Zn	68	-0.0158	257.49	105.335	ug/L	113.668
|	As	75	0.0339	119.51	-114.019	ug/L	-145.996
L	Se	82	0.2265	99.13	7.960	ug/L	-11.137
	Y	89			373880.425	ug/L	375598.358
⌜	Mo	97	0.1620	6.79	258.338	ug/L	96.668
|	Ag	107	0.0667	25.67	282.339	ug/L	56.001
|>	In	115			416729.284	ug/L	431482.203
|	Cd	111	0.0023	221.55	19.484	ug/L	18.140
|	Sn	117	0.2053	12.48	221.337	ug/L	73.334
|	Sb	121	0.8278	31.94	2330.224	ug/L	72.334
L	Ba	135	0.0014	293.89	22.334	ug/L	22.334
	Tb	159			264741.685	ug/L	272787.563
⌜>	Ho	165			241803.169	ug/L	245296.396
|	Tl	205	0.0082	66.25	167.336	ug/L	143.336
|	Pb	208	-0.0022	204.88	152.335	ug/L	163.669
L	U	238	0.0153	80.70	99.001	ug/L	49.334

	Bi	209			133319.175	ug/L	136945.750
⌈>	Sc	45			278154.796	ug/L	276293.119
|	Cr	50	0.0778	158.79	385.558	ug/L	369.770
L	Cr	53	2.5006	12.30	3058.358	ug/L	1849.805
⌈	Ni	61	-1.7006	108.17	1298.405	ug/L	1391.082
|	Cu	63	0.0002	2105.05	367.342	ug/L	368.342
|	Br	79			442.345	ug/L	372.009
L>	Ge	74			759609.653	ug/L	762403.598
⌈	Ag	109	0.0672	29.82	262.672	ug/L	48.334
L>	In	115			416729.284	ug/L	431482.203
⌈	Pb	206	-0.0048	86.01	45.334	ug/L	52.001
|	Pb	207	-0.0113	82.05	31.334	ug/L	42.667
L>	Bi	209			133319.175	ug/L	136945.750
	Hg	200			20.334	ug/L	21.000
	Pd	106			236.385	ug/L	261.215
	Kr	83			158.002	ug/L	169.003
	Ti	48			-1738.201	ug/L	-1931.777
	Ca	44			32256.031	ug/L	31786.313

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		100.674		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		99.024		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		96.581		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.576		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		100.674		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		99.634		
⌈	Ag	109				
⌊>	In	115		96.581		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		97.352		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Reslope before continuing analytical run

Corrective action was taken as stated in method 6020 section 7.8

..."During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: ORoberts

Date: 2-2-99

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Blank

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:47:56
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Blank.012
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76045.959	ug/L	
⌜	Be	9			6.000	ug/L	
|	Al	27			3415.467	ug/L	
|>	Sc	45			276112.707	ug/L	
|	V	51			2676.619	ug/L	
|	Cr	52			12439.873	ug/L	
|	Mn	55			2436.899	ug/L	
|	Fe	57			28037.894	ug/L	
|	Co	59			174.669	ug/L	
|	Ni	60			384.960	ug/L	
⌞	Cu	65			224.602	ug/L	
⌜>	Ge	72			546222.316	ug/L	
|	Zn	68			84.001	ug/L	
|	As	75			-154.006	ug/L	
⌞	Se	82			7.267	ug/L	
	Y	89			376053.470	ug/L	
⌜	Mo	97			152.336	ug/L	
|	Ag	107			112.668	ug/L	
|>	In	115			417621.927	ug/L	
|	Cd	111			14.029	ug/L	
|	Sn	117			119.668	ug/L	
|	Sb	121			803.364	ug/L	
⌞	Ba	135			24.000	ug/L	
	Tb	159			267477.192	ug/L	
⌜>	Ho	165			241583.455	ug/L	
|	Tl	205			123.668	ug/L	
|	Pb	208			130.335	ug/L	
⌞	U	238			31.334	ug/L	

	Bi	209	132585.408	ug/L
⌈>	Sc	45	276112.707	ug/L
|	Cr	50	371.207	ug/L
⌊	Cr	53	2751.959	ug/L
⌈	Ni	61	1337.409	ug/L
|	Cu	63	324.674	ug/L
|	Br	79	398.343	ug/L
⌊>	Ge	74	759683.412	ug/L
⌈	Ag	109	103.335	ug/L
⌊>	In	115	417621.927	ug/L
⌈	Pb	206	36.334	ug/L
|	Pb	207	27.667	ug/L
⌊>	Bi	209	132585.408	ug/L
	Hg	200	20.334	ug/L
	Pd	106	255.272	ug/L
	Kr	83	161.003	ug/L
	Ti	48	-1845.221	ug/L
	Ca	44	31791.320	ug/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Standard 1

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:52:21
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Standard 1.013
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 2
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75926.679	ug/L	76045.959
⌈	Be	9	96.4117	3.15	6130.710	ug/L	6.000
|	Al	27	92.3068	2.10	177790.022	ug/L	3415.467
|>	Sc	45			274070.433	ug/L	276112.707
|	V	51	105.6590	3.82	452163.844	ug/L	2676.619
|	Cr	52	103.9376	2.94	406190.586	ug/L	12439.873
|	Mn	55	102.0742	2.90	645424.633	ug/L	2436.899
|	Fe	57	5093.4653	1.65	690201.845	ug/L	28037.894
|	Co	59	102.3536	2.16	522603.650	ug/L	174.669
|	Ni	60	101.8027	4.20	112558.381	ug/L	384.960
⌊	Cu	65	101.2935	1.91	119817.590	ug/L	224.602
⌈>	Ge	72			538419.306	ug/L	546222.316
|	Zn	68	101.0996	1.07	45128.317	ug/L	84.001
|	As	75	102.1411	1.68	91154.123	ug/L	-154.006
⌊	Se	82	105.2507	1.64	8773.537	ug/L	7.267
	Y	89			371647.465	ug/L	376053.470
⌈	Mo	97	103.1776	1.44	104985.072	ug/L	152.336
|	Ag	107	103.5880	2.85	354727.773	ug/L	112.668
|>	In	115			415523.617	ug/L	417621.927
|	Cd	111	102.6302	1.77	85298.371	ug/L	14.029
|	Sn	117	102.7171	1.25	75275.561	ug/L	119.668
|	Sb	121	102.3643	3.04	280594.828	ug/L	803.364
⌊	Ba	135	101.8804	2.01	55887.358	ug/L	24.000
	Tb	159			267172.958	ug/L	267477.192
⌈>	Ho	165			242497.560	ug/L	241583.455
|	Tl	205	102.8812	1.04	328811.192	ug/L	123.668
|	Pb	208	103.5857	0.37	424668.429	ug/L	130.335
⌊	U	238	102.8736	0.88	343772.718	ug/L	31.334

	Bi	209			134002.263	ug/L	132585.408
⌈>	Sc	45			274070.433	ug/L	276112.707
|	Cr	50	103.7825	1.66	18028.780	ug/L	371.207
L	Cr	53	103.2168	3.13	51386.106	ug/L	2751.959
⌈	Ni	61	100.5017	3.27	6480.868	ug/L	1337.409
|	Cu	63	98.9343	1.61	255868.037	ug/L	324.674
|	Br	79			437.678	ug/L	398.343
L>	Ge	74			760851.132	ug/L	759683.412
⌈	Ag	109	101.9436	2.96	328033.967	ug/L	103.335
L>	In	115			415523.617	ug/L	417621.927
⌈	Pb	206	103.5448	1.28	113458.274	ug/L	36.334
|	Pb	207	102.4010	1.51	92984.233	ug/L	27.667
L>	Bi	209			134002.263	ug/L	132585.408
	Hg	200			23.334	ug/L	20.334
	Pd	106			336.992	ug/L	255.272
	Kr	83			154.002	ug/L	161.003
	Ti	48			-1717.288	ug/L	-1845.221
	Ca	44			31888.873	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 09:57:07
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.014
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76531.269	ug/L	76045.959
⌜	Be	9	99.6547	0.64	6140.714	ug/L	6.000
|	Al	27	100.9644	2.54	180327.361	ug/L	3415.467
|>	Sc	45			275400.624	ug/L	276112.707
|	V	51	100.0480	1.92	454755.296	ug/L	2676.619
|	Cr	52	101.5864	1.64	414559.726	ug/L	12439.873
|	Mn	55	99.9500	1.85	648422.461	ug/L	2436.899
|	Fe	57	4933.4735	4.16	684603.330	ug/L	28037.894
|	Co	59	98.9995	1.07	519985.257	ug/L	174.669
|	Ni	60	98.7361	2.03	111710.732	ug/L	384.960
⌞	Cu	65	98.3006	1.02	118360.409	ug/L	224.602
⌜>	Ge	72			543346.230	ug/L	546222.316
|	Zn	68	98.8212	1.26	44997.539	ug/L	84.001
|	As	75	99.7544	3.04	91755.372	ug/L	-154.006
⌞	Se	82	100.0395	3.01	8857.193	ug/L	7.267
	Y	89			373027.524	ug/L	376053.470
⌜	Mo	97	100.6466	2.64	104870.648	ug/L	152.336
|	Ag	107	99.6399	0.71	350905.952	ug/L	112.668
|>	In	115			412512.790	ug/L	417621.927
|	Cd	111	99.8151	0.88	84530.130	ug/L	14.029
|	Sn	117	100.5046	2.23	75087.933	ug/L	119.668
|	Sb	121	101.9564	1.27	283954.216	ug/L	803.364
⌞	Ba	135	102.1110	2.65	56628.916	ug/L	24.000
	Tb	159			266976.935	ug/L	267477.192
⌜>	Ho	165			244952.365	ug/L	241583.455
|	Tl	205	98.9511	0.76	328685.414	ug/L	123.668
|	Pb	208	99.3667	0.50	426265.540	ug/L	130.335
⌞	U	238	99.7694	1.08	346461.036	ug/L	31.334

	Bi	209			134605.527	ug/L	132585.408
⌈>	Sc	45			275400.624	ug/L	276112.707
|	Cr	50	99.6072	1.65	18048.083	ug/L	371.207
L	Cr	53	99.2113	1.98	51261.319	ug/L	2751.959
⌈	Ni	61	98.3204	1.68	6418.506	ug/L	1337.409
|	Cu	63	98.2604	1.96	252323.224	ug/L	324.674
|	Br	79			445.011	ug/L	398.343
L>	Ge	74			763698.313	ug/L	759683.412
⌈	Ag	109	99.7940	1.00	325039.339	ug/L	103.335
L>	In	115			412512.790	ug/L	417621.927
⌈	Pb	206	99.6159	1.37	113535.564	ug/L	36.334
|	Pb	207	100.8621	0.68	94217.627	ug/L	27.667
L>	Bi	209			134605.527	ug/L	132585.408
	Hg	200			19.000	ug/L	20.334
	Pd	106			288.296	ug/L	255.272
	Kr	83			162.003	ug/L	161.003
	Ti	48			-1766.967	ug/L	-1845.221
	Ca	44			31427.848	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	99.655			
|	Al	27	100.964			
|>	Sc	45		99.742		
|	V	51	100.048			
|	Cr	52	101.586			
|	Mn	55	99.950			
|	Fe	57	98.669			
|	Co	59	99.000			
|	Ni	60	98.736			
⌊	Cu	65	98.301			
⌈>	Ge	72		99.473		
|	Zn	68	98.821			
|	As	75	99.754			
⌊	Se	82	100.040			
	Y	89				
⌈	Mo	97	100.647			
|	Ag	107	99.640			
|>	In	115		98.777		
|	Cd	111	99.815			
|	Sn	117	100.505			
|	Sb	121	101.956			
⌊	Ba	135	102.111			
	Tb	159				
⌈>	Ho	165		101.395		
|	Tl	205	98.951			
|	Pb	208	99.367			
⌊	U	238	99.769			
	Bi	209				
⌈>	Sc	45		99.742		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.528		
⌈	Ag	109				
⌊>	In	115		98.777		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.524		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:01:50
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.015
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75591.277	ug/L	76045.959
⌈	Be	9	0.0891	30.63	11.333	ug/L	6.000
|	Al	27	-0.2337	81.93	2961.005	ug/L	3415.467
|>	Sc	45			272524.579	ug/L	276112.707
|	V	51	-0.0244	231.76	2533.063	ug/L	2676.619
|	Cr	52	-0.0326	380.59	12145.619	ug/L	12439.873
|	Mn	55	-0.0455	48.41	2112.511	ug/L	2436.899
|	Fe	57	-4.8328	188.40	27019.392	ug/L	28037.894
|	Co	59	0.0065	41.62	206.004	ug/L	174.669
|	Ni	60	-0.0163	145.47	361.428	ug/L	384.960
⌊	Cu	65	-0.0113	127.97	208.367	ug/L	224.602
⌈>	Ge	72			535696.104	ug/L	546222.316
|	Zn	68	0.0154	114.78	89.335	ug/L	84.001
|	As	75	-0.0374	157.74	-185.849	ug/L	-154.006
⌊	Se	82	-0.0525	360.10	2.330	ug/L	7.267
	Y	89			368029.441	ug/L	376053.470
⌈	Mo	97	0.0416	44.49	196.003	ug/L	152.336
|	Ag	107	0.0739	31.62	375.342	ug/L	112.668
|>	In	115			417567.274	ug/L	417621.927
|	Cd	111	0.0026	118.90	16.275	ug/L	14.029
|	Sn	117	0.2046	32.74	273.672	ug/L	119.668
|	Sb	121	0.6591	43.48	2648.619	ug/L	803.364
⌊	Ba	135	-0.0000	13162.84	24.000	ug/L	24.000
	Tb	159			266025.076	ug/L	267477.192
⌈>	Ho	165			242315.502	ug/L	241583.455
|	Tl	205	0.0005	56.97	125.668	ug/L	123.668
|	Pb	208	0.0059	32.08	155.669	ug/L	130.335
⌊	U	238	0.0221	39.54	107.001	ug/L	31.334

	Bi	209			133969.611	ug/L	132585.408
┌>	Sc	45			272524.579	ug/L	276112.707
│	Cr	50	-0.0389	497.46	359.547	ug/L	371.207
└	Cr	53	-0.7779	5.39	2339.548	ug/L	2751.959
┌	Ni	61	-0.0082	12500.95	1322.074	ug/L	1337.409
│	Cu	63	0.0115	39.72	350.008	ug/L	324.674
│	Br	79			367.675	ug/L	398.343
└>	Ge	74			751235.025	ug/L	759683.412
┌	Ag	109	0.0761	26.88	353.675	ug/L	103.335
└>	In	115			417567.274	ug/L	417621.927
┌	Pb	206	0.0014	99.08	38.334	ug/L	36.334
│	Pb	207	0.0061	92.17	33.667	ug/L	27.667
└>	Bi	209			133969.611	ug/L	132585.408
	Hg	200			23.000	ug/L	20.334
	Pd	106			269.711	ug/L	255.272
	Kr	83			153.669	ug/L	161.003
	Ti	48			-1985.427	ug/L	-1845.221
	Ca	44			30618.417	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		98.700		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.073		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.987		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		100.303		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		98.700		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.888		
⌈	Ag	109				
⌊>	In	115		99.987		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.044		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ0CTB

Sample Description: Method Blank Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:06:14
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CQ0CTB.016
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 24
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77416.169	~~ug/L~~ ug/kg	76045.959
⌜	Be	9	-0.8191	455.59	5.667	ug/L	6.000
|	Al	27	382.0696	3.88	10355.863	ug/L	3415.467
|>	Sc	45			282176.014	ug/L	276112.707
|	V	51	13.3981	38.24	3352.886	ug/L	2676.619
|	Cr	52	93.9975	5.40	16521.717	ug/L	12439.873
|	Mn	55	20.6467	3.62	3856.893	ug/L	2436.899
|	Fe	57	876.3574	68.03	29831.302	ug/L	28037.894
|	Co	59	0.1405	329.75	186.003	ug/L	174.669
|	Ni	60	36.5504	4.80	815.979	ug/L	384.960
⌊	Cu	65	86.8299	2.10	1298.795	ug/L	224.602
⌜>	Ge	72			538057.942	ug/L	546222.316
|	Zn	68	116.5101	3.82	607.019	ug/L	84.001
|	As	75	1.8740	183.94	-134.530	ug/L	-154.006
⌊	Se	82	24.3095	73.85	28.424	ug/L	7.267
	Y	89			373582.722	ug/L	376053.470
⌜	Mo	97	10.9817	44.07	259.005	ug/L	152.336
|	Ag	107	1.7315	37.22	168.669	ug/L	112.668
|>	In	115			404541.795	ug/L	417621.927
|	Cd	111	0.8677	24.97	20.816	ug/L	14.029
|	Sn	117	1206.4445	0.48	8943.889	ug/L	119.668
|	Sb	121	0.7145	413.40	796.697	ug/L	803.364
⌊	Ba	135	65.5589	4.01	379.676	ug/L	24.000
	Tb	159			261178.012	ug/L	267477.192
⌜>	Ho	165			237602.294	ug/L	241583.455
|	Tl	205	-2.0258	9.43	56.334	ug/L	123.668
|	Pb	208	15.4100	7.99	768.682	ug/L	130.335
⌊	U	238	0.3315	27.38	42.000	ug/L	31.334

	Bi	209			132554.966	ug/L	132585.408
[>	Sc	45			282176.014	ug/L	276112.707
[	Cr	50	83.7358	31.41	531.664	ug/L	371.207
[	Cr	53	-53.9351	25.48	2540.585	ug/L	2751.959
[	Ni	61	84.0888	135.89	1382.748	ug/L	1337.409
[	Cu	63	91.5335	2.84	2662.608	ug/L	324.674
[	Br	79			1035.048	ug/L	398.343
[>	Ge	74			760491.647	ug/L	759683.412
[	Ag	109	1.3273	43.78	142.335	ug/L	103.335
[>	In	115			404541.795	ug/L	417621.927
[	Pb	206	14.2079	7.78	195.670	ug/L	36.334
[	Pb	207	16.1320	18.18	175.670	ug/L	27.667
[>	Bi	209			132554.966	ug/L	132585.408
	Hg	200			35.667	ug/L	20.334
	Pd	106			265.255	ug/L	255.272
	Kr	83			143.002	ug/L	161.003
	Ti	48			-393.109	ug/L	-1845.221
	Ca	44			49302.441	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		102.196		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		98.505		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		96.868		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		98.352		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		102.196		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		100.106		
	Ag	109				
>	In	115		96.868		
	Pb	206				
	Pb	207				
>	Bi	209		99.977		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ0CTC

Sample Description: DCS Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:10:41
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CQ0CTC.017
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 25
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78633.006	~~ug/L~~ µg/Kg	76045.959
⌜	Be	9	19701.2301	4.59	12553.641	ug/L	6.000
|	Al	27	20040.0248	3.10	366955.300	ug/L	3415.467
|>	Sc	45			285117.609	ug/L	276112.707
|	V	51	19435.0144	4.29	911511.462	ug/L	2676.619
|	Cr	52	20394.6069	3.30	848491.751	ug/L	12439.873
|	Mn	55	20229.2970	3.72	1355833.542	ug/L	2436.899
|	Fe	57	1284.1229	43.00	30710.045	ug/L	28037.894
|	Co	59	19490.6855	4.69	1059281.448	ug/L	174.669
|	Ni	60	19742.7131	2.47	230829.686	ug/L	384.960
⌞	Cu	65	20094.6169	2.04	250179.247	ug/L	224.602
⌜>	Ge	72			554783.607	ug/L	546222.316
|	Zn	68	19841.2707	1.05	92169.751	ug/L	84.001
|	As	75	19828.0164	0.25	186424.103	ug/L	-154.006
⌞	Se	82	19392.9802	3.83	17518.450	ug/L	7.267
	Y	89			381471.731	ug/L	376053.470
⌜	Mo	97	19142.1466	1.98	198782.123	ug/L	152.336
|	Ag	107	21445.1767	2.55	752901.077	ug/L	112.668
|>	In	115			411337.401	ug/L	417621.927
|	Cd	111	19733.9453	0.97	166621.449	ug/L	14.029
|	Sn	117	1700.5120	4.92	12764.165	ug/L	119.668
|	Sb	121	19280.9116	0.88	534811.141	ug/L	803.364
⌞	Ba	135	20763.3285	0.98	114841.591	ug/L	24.000
	Tb	159			265570.487	ug/L	267477.192
⌜>	Ho	165			242631.358	ug/L	241583.455
|	Tl	205	19726.0858	0.38	648896.883	ug/L	123.668
|	Pb	208	19965.0390	0.80	848175.438	ug/L	130.335
⌞	U	238	20109.5137	1.11	691714.143	ug/L	31.334

TV = 20,000 µg/Kg

	Bi	209			134435.161	ug/L	132585.408
⌈>	Sc	45			285117.609	ug/L	276112.707
|	Cr	50	20266.3501	2.40	37613.846	ug/L	371.207
L	Cr	53	20293.9014	3.18	105570.217	ug/L	2751.959
⌈	Ni	61	19425.3366	1.20	11594.821	ug/L	1337.409
|	Cu	63	20156.2976	2.44	527597.360	ug/L	324.674
|	Br	79			1183.728	ug/L	398.343
L>	Ge	74			778723.775	ug/L	759683.412
⌈	Ag	109	21561.5187	2.07	700067.089	ug/L	103.335
L>	In	115			411337.401	ug/L	417621.927
⌈	Pb	206	19958.5744	1.70	227089.349	ug/L	36.334
|	Pb	207	19982.0145	2.31	186327.834	ug/L	27.667
L>	Bi	209			134435.161	ug/L	132585.408
	Hg	200			30.334	ug/L	20.334
	Pd	106			396.189	ug/L	255.272
	Kr	83			151.336	ug/L	161.003
	Ti	48			-476.503	ug/L	-1845.221
	Ca	44			51954.826	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		103.261		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		101.567		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.495		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		100.434		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		103.261		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		102.506		
⌈	Ag	109				
⌊>	In	115		98.495		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.395		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
U 238 Upper	U	238	U above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ0CTL

Sample Description: DCS Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:15:06
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CQ0CTL.018
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 26
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78234.832	~~ug/L~~ ug/kg	76045.959
⌈	Be	9	19155.8178	1.94	12235.363	ug/L	6.000
|	Al	27	19875.7587	3.31	364700.811	ug/L	3415.467
|>	Sc	45			285746.790	ug/L	276112.707
|	V	51	19686.4032	0.67	925875.974	ug/L	2676.619
|	Cr	52	19959.6938	1.28	832720.643	ug/L	12439.873
|	Mn	55	19655.0467	1.03	1320372.165	ug/L	2436.899
|	Fe	57	819.9658	85.31	30135.680	ug/L	28037.894
|	Co	59	19352.0133	1.66	1054105.252	ug/L	174.669
|	Ni	60	19527.7322	2.54	228720.847	ug/L	384.960
⌊	Cu	65	19282.5840	2.15	240669.523	ug/L	224.602
⌈>	Ge	72			548347.900	ug/L	546222.316
|	Zn	68	19491.8227	2.88	89482.113	ug/L	84.001
|	As	75	19430.1326	1.98	180491.006	ug/L	-154.006
⌊	Se	82	19016.4283	4.50	16983.380	ug/L	7.267
	Y	89			378883.230	ug/L	376053.470
⌈	Mo	97	19223.9362	1.38	195394.665	ug/L	152.336
|	Ag	107	21276.9911	0.14	731169.861	ug/L	112.668
|>	In	115			402529.423	ug/L	417621.927
|	Cd	111	19842.9198	1.21	163995.424	ug/L	14.029
|	Sn	117	1622.9421	1.16	11932.771	ug/L	119.668
|	Sb	121	19044.1843	1.16	516883.381	ug/L	803.364
⌊	Ba	135	20846.1383	0.51	112834.509	ug/L	24.000
	Tb	159			265294.993	ug/L	267477.192
⌈>	Ho	165			241541.749	ug/L	241583.455
|	Tl	205	19732.2885	0.72	646162.414	ug/L	123.668
|	Pb	208	19813.5006	1.24	837983.641	ug/L	130.335
⌊	U	238	19897.7722	1.61	681217.277	ug/L	31.334

TV = 20,000 ug/kg

	Bi	209			133833.361	ug/L	132585.408
⌈>	Sc	45			285746.790	ug/L	276112.707
|	Cr	50	19920.1305	0.36	37065.333	ug/L	371.207
L	Cr	53	19569.0357	1.14	102170.061	ug/L	2751.959
⌈	Ni	61	19725.3900	0.56	11605.498	ug/L	1337.409
|	Cu	63	20286.6545	1.47	524319.455	ug/L	324.674
|	Br	79			1317.741	ug/L	398.343
L>	Ge	74			768965.813	ug/L	759683.412
⌈	Ag	109	21552.1281	1.23	685057.270	ug/L	103.335
L>	In	115			402529.423	ug/L	417621.927
⌈	Pb	206	19732.0689	2.33	223561.934	ug/L	36.334
|	Pb	207	19927.0385	2.07	185044.304	ug/L	27.667
L>	Bi	209			133833.361	ug/L	132585.408
	Hg	200			22.000	ug/L	20.334
	Pd	106			185.758	ug/L	255.272
	Kr	83			163.336	ug/L	161.003
	Ti	48			-407.855	ug/L	-1845.221
	Ca	44			53405.885	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		103.489		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		100.389		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		96.386		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		99.983		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		103.489		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		101.222		
	Ag	109				
>	In	115		96.386		
	Pb	206				
	Pb	207				
>	Bi	209		100.941		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4K

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:19:32
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4K.019
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 27
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 5e+002
Sample Prep Volume (mL): 5e+001
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79586.916	~~ug/L~~ ug/kg	76045.959
⌜	Be	9	294.9044	2.42	339.007	ug/L	6.000
|	Al	27	5880376.5168	1.75	186705814.793	ug/L	3415.467
|>	Sc	45			470563.014	ug/L	276112.707
|	V	51	15167.1844	2.50	1246365.783	ug/L	2676.619
|	Cr	52	19666.3011	0.11	1431360.448	ug/L	12439.873
|	Mn	55	201056.7986	1.61	23542092.062	ug/L	2436.899
|	Fe	57	8490207.5797	2.53	20521447.365	ug/L	28037.894
|	Co	59	9892.8086	2.55	941187.714	ug/L	174.669
|	Ni	60	7063.4890	4.70	144938.746	ug/L	384.960
⌞	Cu	65	17928.6796	3.00	390673.689	ug/L	224.602
⌜>	Ge	72			587263.733	ug/L	546222.316
|	Zn	68	218920.2896	1.04	1140147.128	ug/L	84.001
|	As	75	460428.3120	2.16	4859248.540	ug/L	-154.006
⌞	Se	82	1104.2999	6.63	1126.385	ug/L	7.267
	Y	89			2297425.553	ug/L	376053.470
⌜	Mo	97	3468.3979	1.80	40483.356	ug/L	152.336
|	Ag	107	2069.9186	2.02	81582.441	ug/L	112.668
|>	In	115			434853.311	ug/L	417621.927
|	Cd	111	6072.7159	2.32	57499.294	ug/L	14.029
|	Sn	117	1000.8923	1.87	8472.600	ug/L	119.668
|	Sb	121	1514.6926	0.86	47859.587	ug/L	803.364
⌞	Ba	135	160467.4044	0.13	994487.441	ug/L	24.000
	Tb	159			295851.064	ug/L	267477.192
⌜>	Ho	165			260103.546	ug/L	241583.455
|	Tl	205	465.2694	1.66	17524.926	ug/L	123.668
|	Pb	208	283398.2375	1.41	13677599.518	ug/L	130.335
⌞	U	238	4351.4030	2.16	170107.643	ug/L	31.334

	Bi	209			138313.859	ug/L	132585.408
⌈>	Sc	45			470563.014	ug/L	276112.707
|	Cr	50	90230.2131	11.47	290912.403	ug/L	371.207
L	Cr	53	19190.9840	2.11	174694.289	ug/L	2751.959
⌈	Ni	61	19747.4478	6.58	12243.385	ug/L	1337.409
|	Cu	63	30762.6667	2.71	843009.779	ug/L	324.674
|	Br	79			14868.887	ug/L	398.343
L>	Ge	74			769288.910	ug/L	759683.412
⌈	Ag	109	2120.4466	2.70	77300.111	ug/L	103.335
L>	In	115			434853.311	ug/L	417621.927
⌈	Pb	206	298192.5743	1.31	3700073.503	ug/L	36.334
|	Pb	207	295754.8638	0.86	3008001.207	ug/L	27.667
L>	Bi	209			138313.859	ug/L	132585.408
	Hg	200			8717.751	ug/L	20.334
	Pd	106			7501.767	ug/L	255.272
	Kr	83			464.679	ug/L	161.003
	Ti	48			16288390.268	ug/L	-1845.221
	Ca	44			9998809.977	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		170.424		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		107.514		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		104.126		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		107.666		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		170.424		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.264		
⌈	Ag	109				
⌊>	In	115		104.126		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		104.321		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
Zn 68 Upper	Zn	68	Zn above linear range - NR
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4N

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:23:58
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4N.020
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 28
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74287.230	~~ug/L~~ ng/kg	76045.959
⌜	Be	9	303.1469	2.23	255.672	ug/L	6.000
|	Al	27	5417868.8552	2.11	126017700.331	ug/L	3415.467
|>	Sc	45			365462.672	ug/L	276112.707
|	V	51	14496.1306	3.34	872470.952	ug/L	2676.619
|	Cr	52	15601.1895	3.33	835564.553	ug/L	12439.873
|	Mn	55	182321.3142	4.09	15630990.736	ug/L	2436.899
|	Fe	57	8781076.4634	3.28	15541758.424	ug/L	28037.894
|	Co	59	10707.1819	3.84	745707.961	ug/L	174.669
|	Ni	60	6916.6207	4.53	103917.340	ug/L	384.960
⌞	Cu	65	21133.4933	4.62	337107.463	ug/L	224.602
⌜>	Ge	72			538818.959	ug/L	546222.316
|	Zn	68	264884.3904	0.28	1194120.752	ug/L	84.001
|	As	75	530233.3562	0.90	4846366.444	ug/L	-154.006
⌞	Se	82	878.8523	2.74	778.058	ug/L	7.267
	Y	89			1766429.946	ug/L	376053.470
⌜	Mo	97	2879.0559	3.39	29275.609	ug/L	152.336
|	Ag	107	496.0482	0.75	17088.052	ug/L	112.668
|>	In	115			401036.585	ug/L	417621.927
|	Cd	111	5704.6663	0.65	46976.230	ug/L	14.029
|	Sn	117	696.1156	0.11	5164.652	ug/L	119.668
|	Sb	121	1688.4881	1.52	46371.621	ug/L	803.364
⌞	Ba	135	137897.2275	1.12	743544.176	ug/L	24.000
	Tb	159			283680.919	ug/L	267477.192
⌜>	Ho	165			249831.883	ug/L	241583.455
|	Tl	205	399.6768	0.53	13663.335	ug/L	123.668
|	Pb	208	222055.9073	1.39	9712528.626	ug/L	130.335
⌞	U	238	2543.2552	1.92	90105.252	ug/L	31.334

	Bi	209			137872.194	ug/L	132585.408
⌈>	Sc	45			365462.672	ug/L	276112.707
⌈	Cr	50	77854.2884	3.03	183915.838	ug/L	371.207
⌊	Cr	53	14516.7839	1.87	97830.882	ug/L	2751.959
⌈	Ni	61	14684.3440	1.79	8415.230	ug/L	1337.409
⌊	Cu	63	30187.0854	3.03	730166.424	ug/L	324.674
⌈	Br	79			8277.148	ug/L	398.343
⌊>	Ge	74			720453.168	ug/L	759683.412
⌈	Ag	109	519.4947	0.82	16544.741	ug/L	103.335
⌊>	In	115			401036.585	ug/L	417621.927
⌈	Pb	206	223881.0064	1.73	2612866.919	ug/L	36.334
⌊	Pb	207	221140.5580	0.55	2115319.561	ug/L	27.667
⌊>	Bi	209			137872.194	ug/L	132585.408
	Hg	200			7925.278	ug/L	20.334
	Pd	106			3778.308	ug/L	255.272
	Kr	83			421.010	ug/L	161.003
	Ti	48			11206347.650	ug/L	-1845.221
	Ca	44			5576643.557	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		132.360		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		98.645		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		96.029		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		103.414		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		132.360		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		94.836		
	Ag	109				
>	In	115		96.029		
	Pb	206				
	Pb	207				
>	Bi	209		103.987		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NA

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
Zn 68 Upper	Zn	68	Zn above linear range - UR
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4R

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:28:27
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4R.021
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 29
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			69327.206	~~ug/L~~ ug/kg	76045.959
[	Be	9	298.9690	3.03	243.338	ug/L	6.000
	Al	27	5689219.1426	0.66	127738152.839	ug/L	3415.467
I>	Sc	45			352765.628	ug/L	276112.707
	V	51	14086.5479	3.46	818259.865	ug/L	2676.619
	Cr	52	17842.4646	3.42	920084.244	ug/L	12439.873
	Mn	55	139911.5752	2.84	11580565.975	ug/L	2436.899
	Fe	57	8130190.8674	3.78	13892148.367	ug/L	28037.894
	Co	59	9313.6805	3.54	626203.716	ug/L	174.669
	Ni	60	7044.8182	5.03	102169.468	ug/L	384.960
L	Cu	65	17626.2020	2.59	271498.623	ug/L	224.602
[>	Ge	72			500439.922	ug/L	546222.316
	Zn	68	188553.9403	1.23	789289.473	ug/L	84.001
	As	75	322341.6446	0.91	2736296.008	ug/L	-154.006
L	Se	82	888.3554	3.60	730.718	ug/L	7.267
	Y	89			1642371.322	ug/L	376053.470
[	Mo	97	2663.3896	0.44	26195.925	ug/L	152.336
	Ag	107	264.1570	2.05	8846.828	ug/L	112.668
I>	In	115			387709.562	ug/L	417621.927
	Cd	111	7590.9903	0.92	60425.295	ug/L	14.029
	Sn	117	793.8631	1.50	5678.185	ug/L	119.668
	Sb	121	1251.7765	1.11	33426.061	ug/L	803.364
L	Ba	135	144813.0069	2.27	754843.613	ug/L	24.000
	Tb	159			272971.419	ug/L	267477.192
[>	Ho	165			241326.338	ug/L	241583.455
	Tl	205	454.1950	1.59	14981.336	ug/L	123.668
	Pb	208	324180.3630	2.59	13696753.821	ug/L	130.335
L	U	238	3652.6213	2.31	124987.467	ug/L	31.334

	Bi	209			130397.598	ug/L	132585.408
⌈>	Sc	45			352765.628	ug/L	276112.707
|	Cr	50	78710.9308	10.50	179047.974	ug/L	371.207
⌊	Cr	53	17047.4215	5.19	110203.966	ug/L	2751.959
⌈	Ni	61	15073.7677	4.83	8007.991	ug/L	1337.409
|	Cu	63	26120.0217	2.32	588570.272	ug/L	324.674
|	Br	79			11417.017	ug/L	398.343
⌊>	Ge	74			671095.247	ug/L	759683.412
⌈	Ag	109	289.7918	2.22	8964.235	ug/L	103.335
⌊>	In	115			387709.562	ug/L	417621.927
⌈	Pb	206	331792.0471	1.04	3662097.279	ug/L	36.334
|	Pb	207	332824.1878	1.31	3011012.457	ug/L	27.667
⌊>	Bi	209			130397.598	ug/L	132585.408
	Hg	200			7500.044	ug/L	20.334
	Pd	106			5084.327	ug/L	255.272
	Kr	83			382.676	ug/L	161.003
	Ti	48			11057580.891	ug/L	-1845.221
	Ca	44			5457233.106	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		127.761		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		91.618		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		92.837		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		99.894		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		127.761		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		88.339		
	Ag	109				
>	In	115		92.837		
	Pb	206				
	Pb	207				
>	Bi	209		98.350		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4X

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 10:32:56
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4X.022
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 30
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			71844.033	~~ug/L~~ ug/kg	76045.959
⌜	Be	9	347.5584	5.46	307.340	ug/L	6.000
|	Al	27	5965033.1664	1.49	146199612.092	ug/L	3415.467
|>	Sc	45			385163.721	ug/L	276112.707
|	V	51	12717.2639	4.98	806654.863	ug/L	2676.619
|	Cr	52	16519.9156	2.19	931608.246	ug/L	12439.873
|	Mn	55	185489.6805	1.92	16767510.169	ug/L	2436.899
|	Fe	57	8304535.5597	5.62	15487798.603	ug/L	28037.894
|	Co	59	8111.7973	3.09	595670.655	ug/L	174.669
|	Ni	60	5296.9791	1.73	84076.649	ug/L	384.960
⌊	Cu	65	12003.1441	0.55	202057.644	ug/L	224.602
⌜>	Ge	72			522064.066	ug/L	546222.316
|	Zn	68	139035.9867	1.67	607517.292	ug/L	84.001
|	As	75	316951.4420	0.56	2806457.165	ug/L	-154.006
⌊	Se	82	715.5373	6.63	616.019	ug/L	7.267
	Y	89			1949243.039	ug/L	376053.470
⌜	Mo	97	1030.9150	1.87	10213.086	ug/L	152.336
|	Ag	107	952.0706	0.73	31569.159	ug/L	112.668
|>	In	115			387204.611	ug/L	417621.927
|	Cd	111	6681.5711	0.79	53117.757	ug/L	14.029
|	Sn	117	953.3496	1.54	6787.347	ug/L	119.668
|	Sb	121	635.5437	0.99	17317.333	ug/L	803.364
⌊	Ba	135	127515.7749	1.38	663914.458	ug/L	24.000
	Tb	159			286274.343	ug/L	267477.192
⌜>	Ho	165			248847.780	ug/L	241583.455
|	Tl	205	341.4717	0.81	11645.195	ug/L	123.668
|	Pb	208	141007.5332	0.65	6143177.278	ug/L	130.335
⌊	U	238	2659.0246	1.36	93825.108	ug/L	31.334

	Bi	209			137602.337	ug/L	132585.408
[>	Sc	45			385163.721	ug/L	276112.707
[	Cr	50	90451.4927	14.74	224338.517	ug/L	371.207
[	Cr	53	15943.1664	2.20	112844.100	ug/L	2751.959
[	Ni	61	12077.4808	4.57	6936.087	ug/L	1337.409
[	Cu	63	18826.8007	2.61	442459.254	ug/L	324.674
[	Br	79			11910.445	ug/L	398.343
[>	Ge	74			699646.766	ug/L	759683.412
[	Ag	109	982.4236	0.75	30123.365	ug/L	103.335
[>	In	115			387204.611	ug/L	417621.927
[	Pb	206	136788.7843	2.39	1593135.594	ug/L	36.334
[	Pb	207	136604.9955	1.76	1303982.596	ug/L	27.667
[>	Bi	209			137602.337	ug/L	132585.408
	Hg	200			4514.759	ug/L	20.334
	Pd	106			5894.815	ug/L	255.272
	Kr	83			462.345	ug/L	161.003
	Ti	48			13193018.929	ug/L	-1845.221
	Ca	44			4003113.439	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		139.495		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		95.577		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		92.717		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		103.007		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		139.495		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		92.097		
⌈	Ag	109				
⌊>	In	115		92.717		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		103.784		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:37:41
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.023
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68190.062	ug/L	76045.959
⌜	Be	9	102.7252	4.09	5486.108	ug/L	6.000
|	Al	27	101.1050	1.75	156620.745	ug/L	3415.467
|>	Sc	45			238904.647	ug/L	276112.707
|	V	51	100.2933	2.22	395409.403	ug/L	2676.619
|	Cr	52	102.4546	3.16	362429.897	ug/L	12439.873
|	Mn	55	101.6810	4.66	571675.383	ug/L	2436.899
|	Fe	57	5007.5501	2.90	602365.689	ug/L	28037.894
|	Co	59	99.3754	4.26	452410.885	ug/L	174.669
|	Ni	60	98.7268	2.67	96856.001	ug/L	384.960
⌞	Cu	65	99.4429	2.45	103821.122	ug/L	224.602
⌜>	Ge	72			469329.015	ug/L	546222.316
|	Zn	68	101.6712	2.07	39971.248	ug/L	84.001
|	As	75	101.2552	2.08	80430.480	ug/L	-154.006
⌞	Se	82	96.0309	2.34	7346.136	ug/L	7.267
	Y	89			321093.915	ug/L	376053.470
⌜	Mo	97	99.6889	1.84	91846.973	ug/L	152.336
|	Ag	107	97.5065	1.02	303565.115	ug/L	112.668
|>	In	115			364614.076	ug/L	417621.927
|	Cd	111	99.2884	1.06	74324.195	ug/L	14.029
|	Sn	117	98.5377	1.12	65090.940	ug/L	119.668
|	Sb	121	101.3009	1.76	249411.074	ug/L	803.364
⌞	Ba	135	103.1300	1.05	50574.872	ug/L	24.000
	Tb	159			242203.813	ug/L	267477.192
⌜>	Ho	165			219028.110	ug/L	241583.455
|	Tl	205	98.7218	0.77	293218.228	ug/L	123.668
|	Pb	208	98.4232	0.24	377524.817	ug/L	130.335
⌞	U	238	97.2407	1.15	301931.650	ug/L	31.334

	Bi	209			119504.819	ug/L	132585.408
⌈>	Sc	45			238904.647	ug/L	276112.707
|	Cr	50	101.9060	2.54	16008.075	ug/L	371.207
L	Cr	53	99.1859	4.17	44429.442	ug/L	2751.959
⌈	Ni	61	96.1518	2.96	5460.765	ug/L	1337.409
|	Cu	63	100.9797	2.15	224526.953	ug/L	324.674
|	Br	79			1887.479	ug/L	398.343
L>	Ge	74			661417.577	ug/L	759683.412
⌈	Ag	109	99.1156	1.10	285362.452	ug/L	103.335
L>	In	115			364614.076	ug/L	417621.927
⌈	Pb	206	98.7924	2.22	99939.417	ug/L	36.334
|	Pb	207	100.8864	2.79	83643.736	ug/L	27.667
L>	Bi	209			119504.819	ug/L	132585.408
	Hg	200			39.334	ug/L	20.334
	Pd	106			99.835	ug/L	255.272
	Kr	83			142.002	ug/L	161.003
	Ti	48			-645.157	ug/L	-1845.221
	Ca	44			31569.170	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	102.725			
|	Al	27	101.105			
|>	Sc	45		86.524		
|	V	51	100.293			
|	Cr	52	102.455			
|	Mn	55	101.681			
|	Fe	57	100.151			
|	Co	59	99.375			
|	Ni	60	98.727			
⌊	Cu	65	99.443			
⌈>	Ge	72		85.923		
|	Zn	68	101.671			
|	As	75	101.255			
⌊	Se	82	96.031			
	Y	89				
⌈	Mo	97	99.689			
|	Ag	107	97.507			
|>	In	115		87.307		
|	Cd	111	99.288			
|	Sn	117	98.538			
|	Sb	121	101.301			
⌊	Ba	135	103.130			
	Tb	159				
⌈>	Ho	165		90.664		
|	Tl	205	98.722			
|	Pb	208	98.423			
⌊	U	238	97.241			
	Bi	209				
⌈>	Sc	45		86.524		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		87.065		
⌈	Ag	109				
⌊>	In	115		87.307		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		90.134		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:42:31
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.024
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67072.768	ug/L	76045.959
⌜	Be	9	0.0284	137.55	6.667	ug/L	6.000
|	Al	27	-0.1262	85.36	2749.293	ug/L	3415.467
|>	Sc	45			237534.042	ug/L	276112.707
|	V	51	0.0781	51.24	2607.183	ug/L	2676.619
|	Cr	52	0.2666	18.24	11610.166	ug/L	12439.873
|	Mn	55	-0.0310	25.17	1924.149	ug/L	2436.899
|	Fe	57	29.5866	15.06	27517.223	ug/L	28037.894
|	Co	59	0.0167	24.51	226.337	ug/L	174.669
|	Ni	60	-0.0649	28.82	268.285	ug/L	384.960
⌊	Cu	65	-0.0052	274.17	187.990	ug/L	224.602
⌜>	Ge	72			457730.110	ug/L	546222.316
|	Zn	68	0.2564	45.24	168.003	ug/L	84.001
|	As	75	0.2422	47.41	60.226	ug/L	-154.006
⌊	Se	82	-0.1279	126.78	-3.278	ug/L	7.267
	Y	89			315502.769	ug/L	376053.470
⌜	Mo	97	-0.0143	79.23	118.668	ug/L	152.336
|	Ag	107	0.0488	35.11	248.338	ug/L	112.668
|>	In	115			360656.682	ug/L	417621.927
|	Cd	111	0.0071	69.65	17.430	ug/L	14.029
|	Sn	117	0.1581	12.16	206.670	ug/L	119.668
|	Sb	121	0.5902	43.71	2135.191	ug/L	803.364
⌊	Ba	135	0.0157	60.58	28.334	ug/L	24.000
	Tb	159			235064.036	ug/L	267477.192
⌜>	Ho	165			213662.068	ug/L	241583.455
|	Tl	205	-0.0087	77.62	84.001	ug/L	123.668
|	Pb	208	0.0358	28.54	249.003	ug/L	130.335
⌊	U	238	0.0186	56.70	83.668	ug/L	31.334

	Bi	209			115800.306	ug/L	132585.408
⌈>	Sc	45			237534.042	ug/L	276112.707
|	Cr	50	-0.1711	62.66	293.224	ug/L	371.207
L	Cr	53	-1.4651	1.00	1749.458	ug/L	2751.959
⌈	Ni	61	-1.4080	123.94	1081.718	ug/L	1337.409
|	Cu	63	0.0288	50.37	340.341	ug/L	324.674
|	Br	79			984.377	ug/L	398.343
L>	Ge	74			650524.864	ug/L	759683.412
⌈	Ag	109	0.0421	23.88	209.337	ug/L	103.335
L>	In	115			360656.682	ug/L	417621.927
⌈	Pb	206	0.0296	42.20	60.667	ug/L	36.334
|	Pb	207	0.0388	16.12	55.334	ug/L	27.667
L>	Bi	209			115800.306	ug/L	132585.408
	Hg	200			28.667	ug/L	20.334
	Pd	106			219.279	ug/L	255.272
	Kr	83			147.002	ug/L	161.003
	Ti	48			-1911.107	ug/L	-1845.221
	Ca	44			30968.172	ug/L	31791.320

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		86.028		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		83.799		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		86.360		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		88.442		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		86.028		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		85.631		
⌈	Ag	109				
⌊>	In	115		86.360		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		87.340		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Reslope before continuing analytical run

Corrective action was taken as stated in method 6020 section 7.8

..."During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: D Roberts

Date: 2-2-99

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Blank

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:46:58
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Blank.025
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			69694.289	ug/L	
⌜	Be	9			6.333	ug/L	
|	Al	27			2518.581	ug/L	
|>	Sc	45			252668.537	ug/L	
|	V	51			2542.719	ug/L	
|	Cr	52			11947.452	ug/L	
|	Mn	55			1899.145	ug/L	
|	Fe	57			27588.888	ug/L	
|	Co	59			184.336	ug/L	
|	Ni	60			249.609	ug/L	
⌞	Cu	65			194.705	ug/L	
⌜>	Ge	72			464105.392	ug/L	
|	Zn	68			187.336	ug/L	
|	As	75			-2.749	ug/L	
⌞	Se	82			23.487	ug/L	
	Y	89			318171.800	ug/L	
⌜	Mo	97			87.334	ug/L	
|	Ag	107			119.002	ug/L	
|>	In	115			364482.175	ug/L	
|	Cd	111			10.159	ug/L	
|	Sn	117			105.668	ug/L	
|	Sb	121			859.368	ug/L	
⌞	Ba	135			20.000	ug/L	
	Tb	159			234784.365	ug/L	
⌜>	Ho	165			216156.303	ug/L	
|	Tl	205			59.334	ug/L	
|	Pb	208			265.337	ug/L	
⌞	U	238			26.000	ug/L	

	Bi	209	117566.377	ug/L
⌈>	Sc	45	252668.537	ug/L
|	Cr	50	333.526	ug/L
L	Cr	53	1725.788	ug/L
⌈	Ni	61	1098.387	ug/L
|	Cu	63	347.674	ug/L
|	Br	79	800.364	ug/L
L>	Ge	74	663076.519	ug/L
⌈	Ag	109	106.001	ug/L
L>	In	115	364482.175	ug/L
⌈	Pb	206	68.668	ug/L
|	Pb	207	58.334	ug/L
L>	Bi	209	117566.377	ug/L
	Hg	200	23.667	ug/L
	Pd	106	237.995	ug/L
	Kr	83	135.669	ug/L
	Ti	48	-2032.515	ug/L
	Ca	44	30991.224	ug/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
⌈	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Standard 1

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:51:27
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Standard 1.026
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 2
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68920.291	ug/L	69694.289
⌜	Be	9	101.1960	1.24	5620.829	ug/L	6.333
|	Al	27	97.3456	2.27	156206.976	ug/L	2518.581
|>	Sc	45			248231.809	ug/L	252668.537
|	V	51	100.2323	2.40	410650.164	ug/L	2542.719
|	Cr	52	102.7724	4.27	378364.971	ug/L	11947.452
|	Mn	55	100.8669	1.99	589393.871	ug/L	1899.145
|	Fe	57	5036.5454	3.31	631303.770	ug/L	27588.888
|	Co	59	100.1415	3.69	473908.873	ug/L	184.336
|	Ni	60	98.0812	2.51	99918.251	ug/L	249.609
⌊	Cu	65	97.7276	0.20	106058.676	ug/L	194.705
⌈>	Ge	72			483107.386	ug/L	464105.392
|	Zn	68	99.3733	2.47	40329.260	ug/L	187.336
|	As	75	100.1529	3.06	81994.729	ug/L	-2.749
⌊	Se	82	96.2342	3.43	7588.287	ug/L	23.487
	Y	89			325416.113	ug/L	318171.800
⌈	Mo	97	99.6252	0.39	92900.147	ug/L	87.334
|	Ag	107	99.2332	1.29	312849.225	ug/L	119.002
|>	In	115			369200.413	ug/L	364482.175
|	Cd	111	99.2457	1.80	75208.738	ug/L	10.159
|	Sn	117	99.4124	1.65	66482.343	ug/L	105.668
|	Sb	121	100.7187	4.01	251238.181	ug/L	859.368
⌊	Ba	135	103.0463	1.53	51166.676	ug/L	20.000
	Tb	159			240916.854	ug/L	234784.365
⌈>	Ho	165			220509.651	ug/L	216156.303
|	Tl	205	97.6812	1.15	291984.777	ug/L	59.334
|	Pb	208	97.5633	1.30	376824.130	ug/L	265.337
⌊	U	238	96.3446	1.93	301065.803	ug/L	26.000

	Bi	209			120117.392	ug/L	117566.377
⌈>	Sc	45			248231.809	ug/L	252668.537
|	Cr	50	100.0533	3.85	16325.925	ug/L	333.526
L	Cr	53	100.5492	1.36	46023.506	ug/L	1725.788
⌈	Ni	61	97.7910	5.71	5628.832	ug/L	1098.387
|	Cu	63	101.1075	2.73	231676.427	ug/L	347.674
|	Br	79			700.024	ug/L	800.364
L>	Ge	74			681577.761	ug/L	663076.519
⌈	Ag	109	100.1386	1.08	291899.899	ug/L	106.001
L>	In	115			369200.413	ug/L	364482.175
⌈	Pb	206	98.7322	1.11	100434.933	ug/L	68.668
|	Pb	207	99.4589	1.96	82923.242	ug/L	58.334
L>	Bi	209			120117.392	ug/L	117566.377
	Hg	200			26.000	ug/L	23.667
	Pd	106			253.377	ug/L	237.995
	Kr	83			139.335	ug/L	135.669
	Ti	48			-1836.946	ug/L	-2032.515
	Ca	44			31141.219	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 10:56:13
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.027
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68662.750	ug/L	69694.289
[	Be	9	103.3865	2.52	5617.161	ug/L	6.333
|	Al	27	103.0843	1.03	155648.401	ug/L	2518.581
|>	Sc	45			240052.589	ug/L	252668.537
|	V	51	98.1108	4.70	389299.064	ug/L	2542.719
|	Cr	52	99.9260	2.43	365512.430	ug/L	11947.452
|	Mn	55	99.5220	2.31	567036.995	ug/L	1899.145
|	Fe	57	4895.2129	3.95	597889.427	ug/L	27588.888
|	Co	59	98.4957	3.58	451260.164	ug/L	184.336
|	Ni	60	99.4849	1.93	96102.622	ug/L	249.609
L	Cu	65	101.0539	6.02	103521.113	ug/L	194.705
[>	Ge	72			476292.621	ug/L	464105.392
|	Zn	68	99.0957	0.59	39432.774	ug/L	187.336
|	As	75	100.5830	0.72	81373.080	ug/L	-2.749
L	Se	82	101.4527	3.08	7600.172	ug/L	23.487
	Y	89			327593.113	ug/L	318171.800
[	Mo	97	99.5425	2.73	91652.080	ug/L	87.334
|	Ag	107	99.5343	1.66	308680.182	ug/L	119.002
|>	In	115			366048.107	ug/L	364482.175
|	Cd	111	100.7795	1.50	75149.939	ug/L	10.159
|	Sn	117	101.0299	0.55	66604.297	ug/L	105.668
|	Sb	121	100.9086	0.96	251358.229	ug/L	859.368
L	Ba	135	98.9886	2.10	50203.234	ug/L	20.000
	Tb	159			234630.032	ug/L	234784.365
[>	Ho	165			217942.571	ug/L	216156.303
|	Tl	205	101.1162	1.11	291812.436	ug/L	59.334
|	Pb	208	101.5022	0.35	378113.335	ug/L	265.337
L	U	238	103.0307	0.91	306726.435	ug/L	26.000

	Bi	209			119623.723	ug/L	117566.377
⌈>	Sc	45			240052.589	ug/L	252668.537
|	Cr	50	99.6302	4.27	15727.554	ug/L	333.526
L	Cr	53	98.6019	3.54	43872.387	ug/L	1725.788
⌈	Ni	61	98.0521	3.49	5431.755	ug/L	1098.387
|	Cu	63	96.9880	0.92	220178.351	ug/L	347.674
|	Br	79			644.021	ug/L	800.364
L>	Ge	74			667493.436	ug/L	663076.519
⌈	Ag	109	99.8709	1.45	289006.305	ug/L	106.001
L>	In	115			366048.107	ug/L	364482.175
⌈	Pb	206	100.5392	0.91	100577.557	ug/L	68.668
|	Pb	207	101.1279	0.80	83535.106	ug/L	58.334
L>	Bi	209			119623.723	ug/L	117566.377
	Hg	200			24.667	ug/L	23.667
	Pd	106			136.965	ug/L	237.995
	Kr	83			154.669	ug/L	135.669
	Ti	48			-1864.386	ug/L	-2032.515
	Ca	44			30874.637	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	103.386			
|	Al	27	103.084			
|>	Sc	45		95.007		
|	V	51	98.111			
|	Cr	52	99.926			
|	Mn	55	99.522			
|	Fe	57	97.904			
|	Co	59	98.496			
|	Ni	60	99.485			
⌊	Cu	65	101.054			
⌈>	Ge	72		102.626		
|	Zn	68	99.096			
|	As	75	100.583			
⌊	Se	82	101.453			
	Y	89				
⌈	Mo	97	99.543			
|	Ag	107	99.534			
|>	In	115		100.430		
|	Cd	111	100.779			
|	Sn	117	101.030			
|	Sb	121	100.909			
⌊	Ba	135	98.989			
	Tb	159				
⌈>	Ho	165		100.826		
|	Tl	205	101.116			
|	Pb	208	101.502			
⌊	U	238	103.031			
	Bi	209				
⌈>	Sc	45		95.007		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.666		
⌈	Ag	109				
⌊>	In	115		100.430		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.750		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 11:01:00
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.028
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			70073.823	ug/L	69694.289
⌜	Be	9	-0.0241	211.35	5.000	ug/L	6.333
|	Al	27	0.7053	111.56	3646.541	ug/L	2518.581
|>	Sc	45			253459.886	ug/L	252668.537
|	V	51	-0.0012	4062.85	2544.910	ug/L	2542.719
|	Cr	52	-0.0999	87.03	11607.831	ug/L	11947.452
|	Mn	55	0.0161	94.50	2001.160	ug/L	1899.145
|	Fe	57	-2.3394	241.81	27379.471	ug/L	27588.888
|	Co	59	0.0078	73.95	223.004	ug/L	184.336
|	Ni	60	0.0247	77.70	275.517	ug/L	249.609
⌊	Cu	65	-0.0079	32.10	186.730	ug/L	194.705
⌜>	Ge	72			468239.360	ug/L	464105.392
|	Zn	68	-0.0183	436.79	182.003	ug/L	187.336
|	As	75	0.0536	64.46	39.874	ug/L	-2.749
⌊	Se	82	-0.0367	468.35	21.050	ug/L	23.487
	Y	89			326081.379	ug/L	318171.800
⌜	Mo	97	0.0386	80.95	122.002	ug/L	87.334
|	Ag	107	0.0482	30.82	266.339	ug/L	119.002
|>	In	115			362779.395	ug/L	364482.175
|	Cd	111	0.0108	32.31	18.090	ug/L	10.159
|	Sn	117	0.2051	30.65	238.671	ug/L	105.668
|	Sb	121	0.6751	35.45	2513.587	ug/L	859.368
⌊	Ba	135	0.0302	81.83	35.000	ug/L	20.000
	Tb	159			238402.807	ug/L	234784.365
⌜>	Ho	165			216569.423	ug/L	216156.303
|	Tl	205	0.0116	22.98	92.668	ug/L	59.334
|	Pb	208	0.0159	105.31	324.671	ug/L	265.337
⌊	U	238	0.0242	38.83	97.668	ug/L	26.000

	Bi	209			119111.048	ug/L	117566.377
⌈>	Sc	45			253459.886	ug/L	252668.537
|	Cr	50	-0.2271	37.65	297.337	ug/L	333.526
L	Cr	53	-0.2872	18.30	1601.439	ug/L	1725.788
⌈	Ni	61	-0.7020	130.57	1073.051	ug/L	1098.387
|	Cu	63	0.0052	55.82	361.342	ug/L	347.674
|	Br	79			587.351	ug/L	800.364
L>	Ge	74			666419.819	ug/L	663076.519
⌈	Ag	109	0.0424	28.47	227.004	ug/L	106.001
L>	In	115			362779.395	ug/L	364482.175
⌈	Pb	206	0.0148	74.14	84.334	ug/L	68.668
|	Pb	207	0.0112	171.41	68.334	ug/L	58.334
L>	Bi	209			119111.048	ug/L	117566.377
	Hg	200			21.334	ug/L	23.667
	Pd	106			215.880	ug/L	237.995
	Kr	83			147.669	ug/L	135.669
	Ti	48			-2042.555	ug/L	-2032.515
	Ca	44			30389.259	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		100.313		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		100.891		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		99.533		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		100.191		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		100.313		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		100.504		
	Ag	109				
>	In	115		99.533		
	Pb	206				
	Pb	207				
>	Bi	209		101.314		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX51

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:05:28
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX51.029
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 31
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			73936.248	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	337.4870	7.40	305.006	ug/L	6.333
|	Al	27	5944248.9302	4.77	142467211.533	ug/L	2518.581
|>	Sc	45			387087.320	ug/L	252668.537
|	V	51	13599.9269	4.68	869293.911	ug/L	2542.719
|	Cr	52	16851.4772	4.68	981512.433	ug/L	11947.452
|	Mn	55	187231.4500	5.00	17154697.361	ug/L	1899.145
|	Fe	57	8094990.8700	5.38	15294702.807	ug/L	27588.888
|	Co	59	7725.7259	4.10	571133.024	ug/L	184.336
|	Ni	60	6596.7806	2.14	102939.332	ug/L	249.609
⌊	Cu	65	18114.5870	1.75	299294.350	ug/L	194.705
⌈>	Ge	72			532308.756	ug/L	464105.392
|	Zn	68	284290.3492	2.15	1257835.286	ug/L	187.336
|	As	75	385984.0439	0.68	3490062.722	ug/L	-2.749
⌊	Se	82	840.5841	3.02	727.851	ug/L	23.487
	Y	89			1868799.616	ug/L	318171.800
⌈	Mo	97	1830.1599	3.64	18829.591	ug/L	87.334
|	Ag	107	1094.6151	4.63	37880.894	ug/L	119.002
|>	In	115			407391.086	ug/L	364482.175
|	Cd	111	7459.9485	2.90	61902.302	ug/L	10.159
|	Sn	117	1030.3114	1.99	7664.466	ug/L	105.668
|	Sb	121	1004.5145	1.07	28713.119	ug/L	859.368
⌊	Ba	135	123497.3251	0.86	697001.480	ug/L	20.000
	Tb	159			282324.328	ug/L	234784.365
⌈>	Ho	165			245253.913	ug/L	216156.303
|	Tl	205	406.2920	1.20	13260.619	ug/L	59.334
|	Pb	208	286130.8693	0.70	11986840.716	ug/L	265.337
⌊	U	238	2812.5697	2.45	94211.578	ug/L	26.000

	Bi	209			138430.212	ug/L	117566.377
⌈>	Sc	45			387087.320	ug/L	252668.537
|	Cr	50	80424.6143	5.17	201279.270	ug/L	333.526
L	Cr	53	16326.1817	4.71	115443.709	ug/L	1725.788
⌈	Ni	61	15654.9435	1.99	8594.674	ug/L	1098.387
|	Cu	63	26510.6200	2.15	644551.987	ug/L	347.674
|	Br	79			10355.200	ug/L	800.364
L>	Ge	74			715934.853	ug/L	663076.519
⌈	Ag	109	1112.5820	0.99	35941.185	ug/L	106.001
L>	In	115			407391.086	ug/L	364482.175
⌈	Pb	206	277338.7846	2.45	3208307.081	ug/L	68.668
|	Pb	207	275706.2445	2.13	2633454.647	ug/L	58.334
L>	Bi	209			138430.212	ug/L	117566.377
	Hg	200			3980.594	ug/L	23.667
	Pd	106			4639.963	ug/L	237.995
	Kr	83			483.013	ug/L	135.669
	Ti	48			12654315.475	ug/L	-2032.515
	Ca	44			6292620.374	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		153.200		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		114.696		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		111.773		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		113.461		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		153.200		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.972		
⌈	Ag	109				
⌊>	In	115		111.773		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		117.746		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)
Zn 68 Upper	Zn	68	Zn above linear range - NR
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX52

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:09:57
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX52.030
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 32
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 4e+002
Sample Prep Volume (mL): 5e+001
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74712.004	~~ug/L~~ µg/Kg	69694.289
⌜	Be	9	231.4917	5.48	192.003	ug/L	6.333
|	Al	27	5032556.0072	2.08	108392774.897	ug/L	2518.581
|>	Sc	45			395225.014	ug/L	252668.537
|	V	51	11880.9362	0.22	683647.031	ug/L	2542.719
|	Cr	52	19971.1658	2.17	1045180.658	ug/L	11947.452
|	Mn	55	109079.0566	3.93	8989486.013	ug/L	1899.145
|	Fe	57	7374202.3498	3.87	12541522.319	ug/L	27588.888
|	Co	59	10565.4826	2.62	702037.899	ug/L	184.336
|	Ni	60	7479.3598	1.02	104846.390	ug/L	249.609
⌊	Cu	65	21912.9241	1.75	325248.501	ug/L	194.705
⌈>	Ge	72			542319.318	ug/L	464105.392
|	Zn	68	222488.0344	3.02	882710.736	ug/L	187.336
|	As	75	798654.3545	2.43	6471861.529	ug/L	-2.749
⌊	Se	82	1330.6679	6.64	1021.974	ug/L	23.487
	Y	89			1412100.275	ug/L	318171.800
⌈	Mo	97	4648.8050	2.15	43087.686	ug/L	87.334
|	Ag	107	455.4809	1.57	14325.990	ug/L	119.002
|>	In	115			417970.053	ug/L	364482.175
|	Cd	111	7917.0680	1.58	59333.085	ug/L	10.159
|	Sn	117	1216.2238	0.10	8165.415	ug/L	105.668
|	Sb	121	3696.8392	1.33	93211.102	ug/L	859.368
⌊	Ba	135	155851.6551	0.18	794215.851	ug/L	20.000
	Tb	159			270137.636	ug/L	234784.365
⌈>	Ho	165			239119.154	ug/L	216156.303
|	Tl	205	519.0186	2.18	14523.191	ug/L	59.334
|	Pb	208	365391.0286	2.08	13129785.882	ug/L	265.337
⌊	U	238	3108.1486	3.00	89322.296	ug/L	26.000

	Bi	209			131538.203	ug/L	117566.377
⌈>	Sc	45			395225.014	ug/L	252668.537
|	Cr	50	85839.4889	1.73	192999.133	ug/L	333.526
L	Cr	53	19608.5352	1.78	124499.906	ug/L	1725.788
⌈	Ni	61	16429.3100	2.60	8237.124	ug/L	1098.387
|	Cu	63	31894.8537	2.13	700619.036	ug/L	347.674
|	Br	79			17174.844	ug/L	800.364
L>	Ge	74			735081.859	ug/L	663076.519
⌈	Ag	109	479.7904	1.86	14069.399	ug/L	106.001
L>	In	115			417970.053	ug/L	364482.175
⌈	Pb	206	364152.3783	1.12	3522404.240	ug/L	68.668
|	Pb	207	360706.7985	1.32	2880696.139	ug/L	58.334
L>	Bi	209			131538.203	ug/L	117566.377
	Hg	200			8892.189	ug/L	23.667
	Pd	106			4194.951	ug/L	237.995
	Kr	83			356.341	ug/L	135.669
	Ti	48			11147807.611	ug/L	-2032.515
	Ca	44			5383273.052	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		156.420		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		116.853		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		114.675		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		110.623		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		156.420		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		110.859		
⌈	Ag	109				
⌊>	In	115		114.675		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		111.884		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
Zn 68 Upper	Zn	68	Zn above linear range – NR
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX53

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:14:25
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX53.031
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 33
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76324.926	ug/L	69694.289
⌜	Be	9	294.2311	3.17	303.006	ug/L	6.333
|	Al	27	5932941.7753	1.03	161261936.876	ug/L	2518.581
|>	Sc	45			438752.448	ug/L	252668.537
|	V	51	13074.6772	0.52	947945.096	ug/L	2542.719
|	Cr	52	17507.2302	1.82	1155533.806	ug/L	11947.452
|	Mn	55	175033.2071	2.17	18182972.666	ug/L	1899.145
|	Fe	57	7863924.1922	1.44	16850369.194	ug/L	27588.888
|	Co	59	11720.9403	1.21	982190.719	ug/L	184.336
|	Ni	60	5755.6099	1.12	101852.521	ug/L	249.609
⌞	Cu	65	15224.7286	2.66	285217.325	ug/L	194.705
⌜>	Ge	72			560224.719	ug/L	464105.392
|	Zn	68	177734.2603	1.07	827814.979	ug/L	187.336
|	As	75	1033084.6256	1.96	9832362.656	ug/L	-2.749
⌞	Se	82	1259.5970	6.91	1133.708	ug/L	23.487
	Y	89			2283509.176	ug/L	318171.800
⌜	Mo	97	2145.1991	0.54	21708.031	ug/L	87.334
|	Ag	107	776.2505	2.31	26482.129	ug/L	119.002
|>	In	115			400790.279	ug/L	364482.175
|	Cd	111	7343.6725	0.72	59971.991	ug/L	10.159
|	Sn	117	1315.3691	0.74	9596.318	ug/L	105.668
|	Sb	121	3609.9957	1.42	99079.131	ug/L	859.368
⌞	Ba	135	137490.9463	0.91	763470.224	ug/L	20.000
	Tb	159			286771.981	ug/L	234784.365
⌜>	Ho	165			247018.515	ug/L	216156.303
|	Tl	205	423.6388	0.91	13924.256	ug/L	59.334
|	Pb	208	262160.2729	1.86	11062579.335	ug/L	265.337
⌞	U	238	3228.7209	1.86	108968.278	ug/L	26.000

	Bi	209			130277.249	ug/L	117566.377
>	Sc	45			438752.448	ug/L	252668.537
	Cr	50	92328.6851	4.32	261773.471	ug/L	333.526
	Cr	53	17527.3897	2.58	140315.000	ug/L	1725.788
	Ni	61	14219.5236	3.67	8218.779	ug/L	1098.387
	Cu	63	24796.7479	1.20	626946.633	ug/L	347.674
	Br	79			18737.849	ug/L	800.364
>	Ge	74			743955.205	ug/L	663076.519
	Ag	109	804.3222	0.76	25597.168	ug/L	106.001
>	In	115			400790.279	ug/L	364482.175
	Pb	206	272007.3973	0.70	2961253.499	ug/L	68.668
	Pb	207	268943.1856	0.49	2417623.144	ug/L	58.334
>	Bi	209			130277.249	ug/L	117566.377
	Hg	200			12066.551	ug/L	23.667
	Pd	106			5305.611	ug/L	237.995
	Kr	83			466.012	ug/L	135.669
	Ti	48			15803327.192	ug/L	-2032.515
	Ca	44			4801009.719	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		173.647		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		120.711		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		109.962		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		114.278		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		173.647		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		112.197		
⌈	Ag	109				
⌊>	In	115		109.962		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		110.812		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
Ge 72 Int Std for sampl	Ge	72	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX54

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:18:54
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX54.032
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 34
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76414.131	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	385.3081	5.53	364.342	ug/L	6.333
|	Al	27	6683049.2097	1.32	168332388.093	ug/L	2518.581
|>	Sc	45			406689.749	ug/L	252668.537
|	V	51	12432.5733	3.40	834984.852	ug/L	2542.719
|	Cr	52	27783.2974	2.68	1687151.950	ug/L	11947.452
|	Mn	55	175542.0968	4.74	16878330.443	ug/L	1899.145
|	Fe	57	8320401.1798	3.33	16509827.527	ug/L	27588.888
|	Co	59	9162.3827	5.81	710445.922	ug/L	184.336
|	Ni	60	6028.6165	2.65	98789.353	ug/L	249.609
⌊	Cu	65	18579.8114	3.70	322295.144	ug/L	194.705
⌜>	Ge	72			542744.224	ug/L	464105.392
|	Zn	68	173505.9475	1.42	782908.666	ug/L	187.336
|	As	75	884374.7339	2.98	8154366.622	ug/L	-2.749
⌊	Se	82	1250.9640	5.01	1092.157	ug/L	23.487
	Y	89			2276210.951	ug/L	318171.800
⌜	Mo	97	1424.6622	4.67	14329.337	ug/L	87.334
|	Ag	107	1551.4118	1.85	52365.368	ug/L	119.002
|>	In	115			397471.133	ug/L	364482.175
|	Cd	111	7656.5010	1.95	62010.430	ug/L	10.159
|	Sn	117	1653.6192	1.41	11933.769	ug/L	105.668
|	Sb	121	1868.7211	2.08	51316.557	ug/L	859.368
⌊	Ba	135	148473.7297	1.92	817644.936	ug/L	20.000
	Tb	159			284063.832	ug/L	234784.365
⌜>	Ho	165			246247.521	ug/L	216156.303
|	Tl	205	369.3581	1.17	12110.253	ug/L	59.334
|	Pb	208	491458.8805	0.77	20672071.713	ug/L	265.337
⌊	U	238	3102.0046	0.66	104358.895	ug/L	26.000

	Bi	209			153532.617	ug/L	117566.377
⌈>	Sc	45			406689.749	ug/L	252668.537
|	Cr	50	91666.7119	8.94	240377.726	ug/L	333.526
L	Cr	53	28318.2324	3.91	208213.106	ug/L	1725.788
⌈	Ni	61	14566.1532	3.46	8038.675	ug/L	1098.387
|	Cu	63	28766.7480	2.50	696444.184	ug/L	347.674
|	Br	79			15057.756	ug/L	800.364
L>	Ge	74			713100.471	ug/L	663076.519
⌈	Ag	109	1557.6239	1.58	49055.263	ug/L	106.001
L>	In	115			397471.133	ug/L	364482.175
⌈	Pb	206	431397.9138	1.00	5535609.013	ug/L	68.668
|	Pb	207	433230.5803	0.92	4589540.155	ug/L	58.334
L>	Bi	209			153532.617	ug/L	117566.377
	Hg	200			9088.315	ug/L	23.667
	Pd	106			5786.206	ug/L	237.995
	Kr	83			529.348	ug/L	135.669
	Ti	48			13556005.193	ug/L	-2032.515
	Ca	44			5002767.686	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		160.958		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		116.944		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		109.051		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		113.921		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		160.958		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.544		
⌈	Ag	109				
⌊>	In	115		109.051		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		130.592		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)	Dilute
As 75 Upper	As	75	As above linear range	
Pb 208 Upper	Pb	208	Pb above linear range	
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)	
Bi 209 Int Std for sampl	Bi	209	QC I(nt Std out of limits (30-120%)	- NR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX55

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:23:24
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX55.033
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 35
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			73993.952	~~ug/L~~ ng/kg	69694.289
⌜	Be	9	350.3870	2.99	322.674	ug/L	6.333
|	Al	27	6225816.8694	2.50	152200198.310	ug/L	2518.581
|>	Sc	45			394605.556	ug/L	252668.537
|	V	51	12858.5259	1.29	838510.070	ug/L	2542.719
|	Cr	52	14915.7357	2.32	888287.044	ug/L	11947.452
|	Mn	55	174116.9963	1.46	16268101.714	ug/L	1899.145
|	Fe	57	8285784.7674	2.53	15966931.128	ug/L	27588.888
|	Co	59	7472.9602	1.91	563386.794	ug/L	184.336
|	Ni	60	5634.9253	0.92	89692.629	ug/L	249.609
⌞	Cu	65	16347.3441	0.65	275436.088	ug/L	194.705
⌜>	Ge	72			529489.295	ug/L	464105.392
|	Zn	68	164610.4150	0.99	724891.772	ug/L	187.336
|	As	75	446869.6155	1.58	4018341.962	ug/L	-2.749
⌞	Se	82	1099.5085	2.15	939.458	ug/L	23.487
	Y	89			1886000.148	ug/L	318171.800
⌜	Mo	97	1536.0667	4.94	15274.323	ug/L	87.334
|	Ag	107	764.6345	2.50	25593.831	ug/L	119.002
|>	In	115			393269.526	ug/L	364482.175
|	Cd	111	6772.5845	3.22	54257.312	ug/L	10.159
|	Sn	117	778.0303	3.54	5614.493	ug/L	105.668
|	Sb	121	1187.9807	1.28	32612.513	ug/L	859.368
⌞	Ba	135	133373.3895	2.46	726547.104	ug/L	20.000
	Tb	159			277842.714	ug/L	234784.365
⌜>	Ho	165			242036.598	ug/L	216156.303
|	Tl	205	372.5923	2.08	12006.164	ug/L	59.334
|	Pb	208	224671.3905	1.35	9288094.881	ug/L	265.337
⌞	U	238	2708.6589	1.83	89566.172	ug/L	26.000

	Bi	209			129961.343	ug/L	117566.377
⌈>	Sc	45			394605.556	ug/L	252668.537
|	Cr	50	84340.1199	2.58	215152.720	ug/L	333.526
L	Cr	53	14480.7100	1.89	104738.390	ug/L	1725.788
⌈	Ni	61	13361.8928	4.35	7489.039	ug/L	1098.387
|	Cu	63	24295.7155	3.04	589539.554	ug/L	347.674
|	Br	79			15346.079	ug/L	800.364
L>	Ge	74			714226.856	ug/L	663076.519
⌈	Ag	109	788.5096	2.61	24620.446	ug/L	106.001
L>	In	115			393269.526	ug/L	364482.175
⌈	Pb	206	234131.5441	2.73	2541920.305	ug/L	68.668
|	Pb	207	213061.4256	3.10	1909781.881	ug/L	58.334
L>	Bi	209			129961.343	ug/L	117566.377
	Hg	200			4608.790	ug/L	23.667
	Pd	106			5333.530	ug/L	237.995
	Kr	83			492.347	ug/L	135.669
	Ti	48			13370749.670	ug/L	-2032.515
	Ca	44			4654358.337	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		156.175		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		114.088		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		107.898		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		111.973		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		156.175		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.714		
⌈	Ag	109				
⌊>	In	115		107.898		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		110.543		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sample	Sc	45	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sample	Sc	45	QC Int Std out of limits (30-120%)

> dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX56

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:27:54
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX56.034
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 36
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72436.408	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	293.4549	7.47	252.005	ug/L	6.333
|	Al	27	5641373.9670	2.09	128016623.157	ug/L	2518.581
|>	Sc	45			366452.509	ug/L	252668.537
|	V	51	12400.3930	2.39	751133.131	ug/L	2542.719
|	Cr	52	19514.1735	1.37	1073824.649	ug/L	11947.452
|	Mn	55	176500.5339	2.34	15305116.651	ug/L	1899.145
|	Fe	57	7793056.2090	1.65	13941715.614	ug/L	27588.888
|	Co	59	5777.0261	3.18	404130.979	ug/L	184.336
|	Ni	60	5791.9175	5.99	85475.229	ug/L	249.609
⌞	Cu	65	14691.6890	1.50	229814.902	ug/L	194.705
⌜>	Ge	72			508105.758	ug/L	464105.392
|	Zn	68	175549.9012	0.66	741671.319	ug/L	187.336
|	As	75	279485.5610	0.63	2412329.639	ug/L	-2.749
⌞	Se	82	726.6173	4.70	604.574	ug/L	23.487
	Y	89			1758670.625	ug/L	318171.800
⌜	Mo	97	1125.7222	2.54	10893.264	ug/L	87.334
|	Ag	107	880.8386	2.04	28603.578	ug/L	119.002
|>	In	115			381655.083	ug/L	364482.175
|	Cd	111	6641.1152	1.66	51647.698	ug/L	10.159
|	Sn	117	1241.4791	2.20	8631.695	ug/L	105.668
|	Sb	121	772.8567	1.58	20906.501	ug/L	859.368
⌞	Ba	135	128502.8996	1.31	679464.938	ug/L	20.000
	Tb	159			268005.419	ug/L	234784.365
⌜>	Ho	165			234471.677	ug/L	216156.303
|	Tl	205	282.9444	1.37	8848.829	ug/L	59.334
|	Pb	208	209556.7211	1.67	8393963.126	ug/L	265.337
⌞	U	238	2097.0020	1.56	67190.047	ug/L	26.000

	Bi	209			129785.000	ug/L	117566.377
⌈>	Sc	45			366452.509	ug/L	252668.537
|	Cr	50	77955.5195	5.42	184833.739	ug/L	333.526
L	Cr	53	19595.9115	3.13	130720.225	ug/L	1725.788
⌈	Ni	61	13522.3529	1.15	7314.612	ug/L	1098.387
|	Cu	63	21288.1499	1.79	499437.664	ug/L	347.674
|	Br	79			15801.942	ug/L	800.364
L>	Ge	74			690526.228	ug/L	663076.519
⌈	Ag	109	915.5623	1.13	27732.509	ug/L	106.001
L>	In	115			381655.083	ug/L	364482.175
⌈	Pb	206	211332.9145	1.19	2292266.501	ug/L	68.668
|	Pb	207	192536.3334	0.79	1724279.732	ug/L	58.334
L>	Bi	209			129785.000	ug/L	117566.377
	Hg	200			3853.225	ug/L	23.667
	Pd	106			5145.905	ug/L	237.995
	Kr	83			436.678	ug/L	135.669
	Ti	48			11331787.692	ug/L	-2032.515
	Ca	44			4788110.383	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		145.033		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
L	Cu	65				
⌈>	Ge	72		109.481		
|	Zn	68				
|	As	75				
L	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		104.712		
|	Cd	111				
|	Sn	117				
|	Sb	121				
L	Ba	135				
	Tb	159				
⌈>	Ho	165		108.473		
|	Tl	205				
|	Pb	208				
L	U	238				
	Bi	209				
⌈>	Sc	45		145.033		
|	Cr	50				
L	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
L>	Ge	74		104.140		
⌈	Ag	109				
L>	In	115		104.712		
⌈	Pb	206				
|	Pb	207				
L>	Bi	209		110.393		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range -NF

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

> Pilote

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX57

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:32:26
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX57.035
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 37
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			71448.283	~~ug/L~~ ng/kg	69694.289
[	Be	9	334.6951	2.23	323.340	ug/L	6.333
|	Al	27	7484119.1728	1.25	191625082.799	ug/L	2518.581
|>	Sc	45			413302.223	ug/L	252668.537
|	V	51	15416.1141	0.93	1052249.016	ug/L	2542.719
|	Cr	52	17181.1168	0.59	1068789.220	ug/L	11947.452
|	Mn	55	180349.3883	1.47	17645515.875	ug/L	1899.145
|	Fe	57	8560112.5991	2.36	17266010.247	ug/L	27588.888
|	Co	59	17495.3961	2.06	1380440.866	ug/L	184.336
|	Ni	60	5525.4442	2.62	92075.405	ug/L	249.609
L	Cu	65	10184.9535	2.27	179754.819	ug/L	194.705
[>	Ge	72			507043.211	ug/L	464105.392
|	Zn	68	116676.7561	2.68	491976.407	ug/L	187.336
|	As	75	524340.9323	1.59	4515828.206	ug/L	-2.749
L	Se	82	880.4882	2.74	725.223	ug/L	23.487
	Y	89			2386510.454	ug/L	318171.800
[	Mo	97	1498.6683	2.06	13884.890	ug/L	87.334
|	Ag	107	642.1454	1.69	20034.243	ug/L	119.002
|>	In	115			366201.550	ug/L	364482.175
|	Cd	111	3261.8299	2.27	24339.245	ug/L	10.159
|	Sn	117	429.3033	2.17	2932.330	ug/L	105.668
|	Sb	121	805.0543	2.55	20849.746	ug/L	859.368
L	Ba	135	148170.5244	2.38	751451.357	ug/L	20.000
	Tb	159			275513.866	ug/L	234784.365
[>	Ho	165			240195.756	ug/L	216156.303
|	Tl	205	290.9759	0.89	9319.465	ug/L	59.334
|	Pb	208	118352.3638	1.53	4855372.276	ug/L	265.337
L	U	238	2225.9161	2.67	73034.300	ug/L	26.000

	Bi	209			117472.212	ug/L	117566.377
⌜>	Sc	45			413302.223	ug/L	252668.537
|	Cr	50	84702.9603	2.12	226170.249	ug/L	333.526
⌞	Cr	53	17399.6331	0.92	131258.267	ug/L	1725.788
⌜	Ni	61	14568.0935	1.28	7615.772	ug/L	1098.387
|	Cu	63	16641.3704	0.66	381781.727	ug/L	347.674
|	Br	79			13819.501	ug/L	800.364
⌞>	Ge	74			674975.390	ug/L	663076.519
⌜	Ag	109	641.1831	0.26	18665.711	ug/L	106.001
⌞>	In	115			366201.550	ug/L	364482.175
⌜	Pb	206	127402.8785	1.08	1250765.489	ug/L	68.668
|	Pb	207	126426.1398	0.18	1024831.148	ug/L	58.334
⌞>	Bi	209			117472.212	ug/L	117566.377
	Hg	200			14268.268	ug/L	23.667
	Pd	106			7474.244	ug/L	237.995
	Kr	83			517.015	ug/L	135.669
	Ti	48			13453939.870	ug/L	-2032.515
	Ca	44			4894343.844	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		163.575		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		109.252		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		100.472		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		111.121		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		163.575		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		101.794		
	Ag	109				
>	In	115		100.472		
	Pb	206				
	Pb	207				
>	Bi	209		99.920		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sample	Sc	45	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sample	Sc	45	QC Int Std out of limits (30-120%)

} dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 11:37:15
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.036
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67673.944	ug/L	69694.289
⌜	Be	9	98.8203	1.95	5469.435	ug/L	6.333
|	Al	27	113.2624	2.76	173900.660	ug/L	2518.581
|>	Sc	45			244417.722	ug/L	252668.537
|	V	51	95.8214	3.06	387637.907	ug/L	2542.719
|	Cr	52	93.2223	0.88	348168.537	ug/L	11947.452
|	Mn	55	95.9145	0.31	556839.578	ug/L	1899.145
|	Fe	57	4855.4494	0.73	604624.470	ug/L	27588.888
|	Co	59	97.5933	2.74	455579.367	ug/L	184.336
|	Ni	60	97.5958	2.67	96029.053	ug/L	249.609
⌞	Cu	65	97.3049	3.46	101598.981	ug/L	194.705
⌜>	Ge	72			460643.570	ug/L	464105.392
|	Zn	68	99.1003	1.85	38138.921	ug/L	187.336
|	As	75	103.0714	2.72	80632.827	ug/L	-2.749
⌞	Se	82	102.0151	0.22	7387.840	ug/L	23.487
	Y	89			323434.029	ug/L	318171.800
⌜	Mo	97	103.5000	0.79	92144.831	ug/L	87.334
|	Ag	107	98.9436	0.83	296650.344	ug/L	119.002
|>	In	115			353849.201	ug/L	364482.175
|	Cd	111	99.1845	1.72	71502.858	ug/L	10.159
|	Sn	117	99.9880	0.83	63722.108	ug/L	105.668
|	Sb	121	99.5255	1.00	239704.198	ug/L	859.368
⌞	Ba	135	99.2044	0.96	48651.194	ug/L	20.000
	Tb	159			226031.922	ug/L	234784.365
⌜>	Ho	165			205993.989	ug/L	216156.303
|	Tl	205	100.5654	2.36	274323.691	ug/L	59.334
|	Pb	208	100.0510	1.87	352252.119	ug/L	265.337
⌞	U	238	100.7796	2.08	283530.073	ug/L	26.000

	Bi	209			110659.086	ug/L	117566.377
⌈>	Sc	45			244417.722	ug/L	252668.537
⌈	Cr	50	96.5533	3.19	15537.482	ug/L	333.526
⌊	Cr	53	96.9442	1.54	43979.370	ug/L	1725.788
⌈	Ni	61	99.1085	0.56	5348.722	ug/L	1098.387
⌈	Cu	63	99.2067	1.60	219899.972	ug/L	347.674
⌈	Br	79			2978.011	ug/L	800.364
⌊>	Ge	74			651759.145	ug/L	663076.519
⌈	Ag	109	99.6027	2.02	278673.059	ug/L	106.001
⌊>	In	115			353849.201	ug/L	364482.175
⌈	Pb	206	101.4509	1.02	93881.092	ug/L	68.668
⌈	Pb	207	101.6870	2.22	77702.971	ug/L	58.334
⌊>	Bi	209			110659.086	ug/L	117566.377
	Hg	200			46.001	ug/L	23.667
	Pd	106			325.605	ug/L	237.995
	Kr	83			140.002	ug/L	135.669
	Ti	48			270.673	ug/L	-2032.515
	Ca	44			30137.391	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	98.820			
|	Al	27	113.262			
|>	Sc	45		96.735		
|	V	51	95.821			
|	Cr	52	93.222			
|	Mn	55	95.915			
|	Fe	57	97.109			
|	Co	59	97.593			
|	Ni	60	97.596			
⌊	Cu	65	97.305			
⌈>	Ge	72		99.254		
|	Zn	68	99.100			
|	As	75	103.071			
⌊	Se	82	102.015			
	Y	89				
⌈	Mo	97	103.500			
|	Ag	107	98.944			
|>	In	115		97.083		
|	Cd	111	99.184			
|	Sn	117	99.988			
|	Sb	121	99.525			
⌊	Ba	135	99.204			
	Tb	159				
⌈>	Ho	165		95.299		
|	Tl	205	100.565			
|	Pb	208	100.051			
⌊	U	238	100.780			
	Bi	209				
⌈>	Sc	45		96.735		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.293		
⌈	Ag	109				
⌊>	In	115		97.083		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		94.125		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	CCV is out of limits (+/- 10%) – NR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 11:42:49
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.037
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68815.067	ug/L	69694.289
⌜	Be	9	-0.0027	3095.51	6.000	ug/L	6.333
|	Al	27	1.8063	73.14	5231.762	ug/L	2518.581
|>	Sc	45			248412.120	ug/L	252668.537
|	V	51	0.0732	25.03	2800.043	ug/L	2542.719
|	Cr	52	0.1415	58.21	12263.386	ug/L	11947.452
|	Mn	55	0.0476	79.17	2144.517	ug/L	1899.145
|	Fe	57	35.3110	33.42	31384.350	ug/L	27588.888
|	Co	59	0.0077	101.09	217.337	ug/L	184.336
|	Ni	60	0.0148	227.20	259.656	ug/L	249.609
⌞	Cu	65	0.0200	91.37	212.603	ug/L	194.705
⌜>	Ge	72			458141.721	ug/L	464105.392
|	Zn	68	-0.0151	764.07	179.003	ug/L	187.336
|	As	75	0.3489	41.17	268.798	ug/L	-2.749
⌞	Se	82	-0.0281	192.85	21.154	ug/L	23.487
	Y	89			316534.183	ug/L	318171.800
⌜	Mo	97	0.0142	130.65	98.668	ug/L	87.334
|	Ag	107	0.0123	44.84	154.669	ug/L	119.002
|>	In	115			358467.164	ug/L	364482.175
|	Cd	111	0.0106	74.22	17.803	ug/L	10.159
|	Sn	117	0.0962	22.04	166.003	ug/L	105.668
|	Sb	121	0.4007	44.99	1822.806	ug/L	859.368
⌞	Ba	135	0.0262	72.97	32.667	ug/L	20.000
	Tb	159			227739.274	ug/L	234784.365
⌜>	Ho	165			208265.669	ug/L	216156.303
|	Tl	205	0.0024	148.38	63.667	ug/L	59.334
|	Pb	208	0.0542	67.51	446.674	ug/L	265.337
⌞	U	238	0.0119	61.76	58.667	ug/L	26.000

	Bi	209			109134.743	ug/L	117566.377
⌈>	Sc	45			248412.120	ug/L	252668.537
|	Cr	50	-0.0042	1537.33	327.150	ug/L	333.526
⌊	Cr	53	-0.5958	11.37	1432.753	ug/L	1725.788
⌈	Ni	61	1.1683	109.76	1099.387	ug/L	1098.387
|	Cu	63	0.0194	67.77	374.009	ug/L	347.674
|	Br	79			1615.774	ug/L	800.364
⌊>	Ge	74			634753.150	ug/L	663076.519
⌈	Ag	109	0.0176	29.77	154.336	ug/L	106.001
⌊>	In	115			358467.164	ug/L	364482.175
⌈	Pb	206	0.0620	71.66	120.002	ug/L	68.668
|	Pb	207	0.0647	69.80	102.668	ug/L	58.334
⌊>	Bi	209			109134.743	ug/L	117566.377
	Hg	200			28.334	ug/L	23.667
	Pd	106			195.246	ug/L	237.995
	Kr	83			135.669	ug/L	135.669
	Ti	48			-1617.197	ug/L	-2032.515
	Ca	44			29206.785	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		98.315		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.715		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.350		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		96.350		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		98.315		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		95.728		
⌈	Ag	109				
⌊>	In	115		98.350		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		92.828		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:47:37
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58.038
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 38
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			71676.095	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	355.2114	7.37	324.340	ug/L	6.333
|	Al	27	6079433.8612	1.30	147307429.899	ug/L	2518.581
|>	Sc	45			391178.055	ug/L	252668.537
|	V	51	12694.2149	0.59	820642.749	ug/L	2542.719
|	Cr	52	12095.8307	2.53	717414.107	ug/L	11947.452
|	Mn	55	192175.1256	2.12	17796718.072	ug/L	1899.145
|	Fe	57	7924306.3295	2.20	15136640.507	ug/L	27588.888
|	Co	59	6541.6185	2.16	488766.991	ug/L	184.336
|	Ni	60	5233.7692	1.82	82601.872	ug/L	249.609
⌊	Cu	65	12504.8878	1.42	208905.844	ug/L	194.705
⌜>	Ge	72			508493.041	ug/L	464105.392
|	Zn	68	146330.2082	0.95	618705.325	ug/L	187.336
|	As	75	183891.5550	3.50	1587675.213	ug/L	-2.749
⌊	Se	82	700.0429	5.23	583.361	ug/L	23.487
	Y	89			2225397.134	ug/L	318171.800
⌜	Mo	97	1100.3425	3.72	10542.996	ug/L	87.334
|	Ag	107	866.0237	2.20	27847.400	ug/L	119.002
|>	In	115			378080.260	ug/L	364482.175
|	Cd	111	6469.1044	2.02	49822.235	ug/L	10.159
|	Sn	117	818.8868	1.83	5676.185	ug/L	105.668
|	Sb	121	601.3913	0.51	16312.811	ug/L	859.368
⌊	Ba	135	133645.8580	1.50	699867.823	ug/L	20.000
	Tb	159			279696.801	ug/L	234784.365
⌜>	Ho	165			238385.958	ug/L	216156.303
|	Tl	205	288.7062	0.63	9177.706	ug/L	59.334
|	Pb	208	151334.1531	0.73	6161957.762	ug/L	265.337
⌊	U	238	2289.2446	1.19	74563.892	ug/L	26.000

	Bi	209			124355.227	ug/L	117566.377
⌈>	Sc	45			391178.055	ug/L	252668.537
|	Cr	50	81031.2367	4.78	204956.590	ug/L	333.526
L	Cr	53	12089.0965	1.09	87111.674	ug/L	1725.788
⌈	Ni	61	12496.1593	4.16	6715.313	ug/L	1098.387
|	Cu	63	20156.3191	2.28	463945.662	ug/L	347.674
|	Br	79			9584.985	ug/L	800.364
L>	Ge	74			677400.769	ug/L	663076.519
⌈	Ag	109	886.3757	1.90	26592.333	ug/L	106.001
L>	In	115			378080.260	ug/L	364482.175
⌈	Pb	206	151916.4216	1.24	1578687.293	ug/L	68.668
|	Pb	207	151382.0364	1.44	1298819.674	ug/L	58.334
L>	Bi	209			124355.227	ug/L	117566.377
	Hg	200			2051.835	ug/L	23.667
	Pd	106			5448.997	ug/L	237.995
	Kr	83			461.012	ug/L	135.669
	Ti	48			13734883.129	ug/L	-2032.515
	Ca	44			3557610.069	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		154.819		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		109.564		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		103.731		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		110.284		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		154.819		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		102.160		
⌈	Ag	109				
⌊>	In	115		103.731		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		105.774		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58 L

Sample Description: Serial Dilution 5x
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:52:09
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58 L.039
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 39
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			70131.796	~~ug/L~~ ng/kg	69694.289
⌜	Be	9	480.3867	20.95	66.001	ug/L	6.333
|	Al	27	7988734.8861	1.69	26886084.679	ug/L	2518.581
|>	Sc	45			271633.992	ug/L	252668.537
|	V	51	16920.0262	3.24	153909.445	ug/L	2542.719
|	Cr	52	16154.7205	3.37	142513.498	ug/L	11947.452
|	Mn	55	267232.3461	2.65	3438305.744	ug/L	1899.145
|	Fe	57	11025096.9018	3.41	2945963.972	ug/L	27588.888
|	Co	59	8856.1336	2.49	92029.068	ug/L	184.336
|	Ni	60	7135.6165	1.51	15834.096	ug/L	249.609
⌞	Cu	65	17476.9520	3.19	40685.185	ug/L	194.705
⌜>	Ge	72			478712.613	ug/L	464105.392
|	Zn	68	153059.3990	2.91	121970.388	ug/L	187.336
|	As	75	192371.1925	1.79	312795.803	ug/L	-2.749
⌞	Se	82	592.3337	16.13	113.273	ug/L	23.487
	Y	89			654472.424	ug/L	318171.800
⌜	Mo	97	1079.4072	2.71	2046.834	ug/L	87.334
|	Ag	107	865.9129	0.91	5417.748	ug/L	119.002
|>	In	115			361325.982	ug/L	364482.175
|	Cd	111	6543.5780	0.75	9644.261	ug/L	10.159
|	Sn	117	842.8179	2.29	1199.729	ug/L	105.668
|	Sb	121	531.3279	4.59	3455.119	ug/L	859.368
⌞	Ba	135	138546.7956	1.46	138715.655	ug/L	20.000
	Tb	159			238393.307	ug/L	234784.365
⌜>	Ho	165			214556.799	ug/L	216156.303
|	Tl	205	316.2863	4.17	1856.473	ug/L	59.334
|	Pb	208	164451.8373	2.00	1205506.681	ug/L	265.337
⌞	U	238	2429.3074	2.05	14264.264	ug/L	26.000

Sample read L 100x RL except for Ba

	Bi	209			114165.262	ug/L	117566.377
⌈>	Sc	45			271633.992	ug/L	252668.537
|	Cr	50	106252.0252	22.19	37511.494	ug/L	333.526
⌊	Cr	53	16050.9157	2.58	17425.468	ug/L	1725.788
⌈	Ni	61	12210.3596	11.28	2189.190	ug/L	1098.387
|	Cu	63	19443.1726	3.51	88756.815	ug/L	347.674
|	Br	79			3297.081	ug/L	800.364
⌊>	Ge	74			669767.126	ug/L	663076.519
⌈	Ag	109	877.9042	3.98	5118.969	ug/L	106.001
⌊>	In	115			361325.982	ug/L	364482.175
⌈	Pb	206	168762.9069	3.31	321988.596	ug/L	68.668
|	Pb	207	167268.4070	2.11	263535.783	ug/L	58.334
⌊>	Bi	209			114165.262	ug/L	117566.377
	Hg	200			420.010	ug/L	23.667
	Pd	106			1176.625	ug/L	237.995
	Kr	83			199.003	ug/L	135.669
	Ti	48			2529623.076	ug/L	-2032.515
	Ca	44			666166.960	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		107.506		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		103.147		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.134		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.260		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		107.506		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.009		
⌈	Ag	109				
⌊>	In	115		99.134		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		97.107		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > dilute
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58 PDS

Sample Description: Post Digestion Spike
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 11:56:38
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58 PDS.040
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 40
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72621.525	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	13565.7275	2.72	12033.522	ug/L	6.333
|	Al	27	5922820.2514	2.37	143759852.785	ug/L	2518.581
|>	Sc	45			391811.747	ug/L	252668.537
|	V	51	25199.2442	2.27	1628021.397	ug/L	2542.719
|	Cr	52	24494.1531	1.99	1436488.707	ug/L	11947.452
|	Mn	55	203150.9513	2.27	18847568.109	ug/L	1899.145
|	Fe	57	7803268.5643	1.49	14932960.079	ug/L	27588.888
|	Co	59	18585.1445	1.35	1390655.220	ug/L	184.336
|	Ni	60	17623.4187	2.30	277697.944	ug/L	249.609
⌞	Cu	65	24548.8579	3.93	410600.567	ug/L	194.705
⌜>	Ge	72			504120.537	ug/L	464105.392
|	Zn	68	162633.9233	1.63	681814.803	ug/L	187.336
|	As	75	196226.8516	1.58	1680094.289	ug/L	-2.749
⌞	Se	82	20378.0977	0.66	16124.075	ug/L	23.487
	Y	89			2175900.196	ug/L	318171.800
⌜	Mo	97	21097.8384	1.45	200047.073	ug/L	87.334
|	Ag	107	19430.4633	0.71	620654.673	ug/L	119.002
|>	In	115			377039.132	ug/L	364482.175
|	Cd	111	25373.8311	1.74	194908.447	ug/L	10.159
|	Sn	117	838.1885	2.98	5792.233	ug/L	105.668
|	Sb	121	19780.2186	1.38	506711.275	ug/L	859.368
⌞	Ba	135	151120.4203	1.43	789410.827	ug/L	20.000
	Tb	159			277169.148	ug/L	234784.365
⌜>	Ho	165			237741.109	ug/L	216156.303
|	Tl	205	17647.8210	1.07	555555.883	ug/L	59.334
|	Pb	208	167059.7430	0.29	6784185.089	ug/L	265.337
⌞	U	238	20226.7190	0.49	656763.801	ug/L	26.000

Spike level 20,000 ug/kg

	Bi	209			122705.714	ug/L	117566.377
⌈>	Sc	45			391811.747	ug/L	252668.537
|	Cr	50	98744.6845	4.32	250033.569	ug/L	333.526
L	Cr	53	24714.7167	1.33	175597.163	ug/L	1725.788
⌈	Ni	61	32360.1052	3.08	15375.094	ug/L	1098.387
|	Cu	63	39333.7970	4.11	891391.674	ug/L	347.674
|	Br	79			9296.788	ug/L	800.364
L>	Ge	74			667257.116	ug/L	663076.519
⌈	Ag	109	19694.4578	0.21	587069.034	ug/L	106.001
L>	In	115			377039.132	ug/L	364482.175
⌈	Pb	206	167870.7226	2.73	1721201.541	ug/L	68.668
|	Pb	207	170618.0282	2.52	1444312.428	ug/L	58.334
L>	Bi	209			122705.714	ug/L	117566.377
	Hg	200			2027.164	ug/L	23.667
	Pd	106			5357.400	ug/L	237.995
	Kr	83			465.012	ug/L	135.669
	Ti	48			13508820.210	ug/L	-2032.515
	Ca	44			3490305.996	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		155.069		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		108.622		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		103.445		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		109.986		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		155.069		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.630		
⌈	Ag	109				
⌊>	In	115		103.445		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		104.371		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper -	Pb	208	Pb above linear range
U 238 Upper	U	238	U above linear range - NR
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58S

Sample Description: Matrix Spike
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:01:02
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58S.041
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 41
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72661.719	~~ug/L~~ ug/kg	69694.289
⌜	Be	9	13685.9502	1.88	12437.203	ug/L	6.333
|	Al	27	6333618.6084	0.94	157525943.152	ug/L	2518.581
|>	Sc	45			401494.430	ug/L	252668.537
|	V	51	26061.8409	0.93	1724876.416	ug/L	2542.719
|	Cr	52	25099.8513	0.87	1507657.475	ug/L	11947.452
|	Mn	55	207588.6873	0.32	19733896.105	ug/L	1899.145
|	Fe	57	8020163.7089	1.19	15723258.751	ug/L	27588.888
|	Co	59	18912.5580	1.26	1450098.720	ug/L	184.336
|	Ni	60	17292.0953	2.33	279173.850	ug/L	249.609
⌊	Cu	65	24471.7907	1.26	419295.199	ug/L	194.705
⌈>	Ge	72			520666.300	ug/L	464105.392
|	Zn	68	160980.2334	1.51	696835.767	ug/L	187.336
|	As	75	200262.0901	0.94	1770998.207	ug/L	-2.749
⌊	Se	82	19991.4834	3.61	16329.941	ug/L	23.487
	Y	89			2241798.823	ug/L	318171.800
⌈	Mo	97	18519.7962	2.57	174299.270	ug/L	87.334
|	Ag	107	20432.5318	0.64	647716.074	ug/L	119.002
|>	In	115			374181.364	ug/L	364482.175
|	Cd	111	25593.3570	0.31	195103.323	ug/L	10.159
|	Sn	117	912.4895	0.81	6248.429	ug/L	105.668
|	Sb	121	3687.3895	1.67	94456.211	ug/L	859.368
⌊	Ba	135	152265.1197	0.77	789377.232	ug/L	20.000
	Tb	159			274170.796	ug/L	234784.365
⌈>	Ho	165			236445.354	ug/L	216156.303
|	Tl	205	17593.0928	0.50	550863.493	ug/L	59.334
|	Pb	208	171420.4397	0.73	6923341.996	ug/L	265.337
⌊	U	238	20686.7745	0.93	668064.545	ug/L	26.000

Spike level = 20,000 µg/kg

	Bi	209			125256.311	ug/L	117566.377
[>	Sc	45			401494.430	ug/L	252668.537
[	Cr	50	101724.1654	1.89	263938.785	ug/L	333.526
[	Cr	53	24746.4059	0.36	180159.581	ug/L	1725.788
[	Ni	61	31239.5911	2.23	15806.567	ug/L	1098.387
[	Cu	63	37445.1813	1.23	901549.045	ug/L	347.674
[	Br	79			9855.499	ug/L	800.364
[>	Ge	74			708733.109	ug/L	663076.519
[	Ag	109	20382.5832	0.56	602962.242	ug/L	106.001
[>	In	115			374181.364	ug/L	364482.175
[	Pb	206	167894.8979	0.71	1757575.854	ug/L	68.668
[	Pb	207	166214.8034	1.09	1436591.135	ug/L	58.334
[>	Bi	209			125256.311	ug/L	117566.377
	Hg	200			2176.521	ug/L	23.667
	Pd	106			5781.162	ug/L	237.995
	Kr	83			515.014	ug/L	135.669
	Ti	48			14269599.993	ug/L	-2032.515
	Ca	44			3617907.237	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		158.902		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		112.187		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.661		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		109.386		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		158.902		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		106.886		
⌈	Ag	109				
⌊>	In	115		102.661		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		106.541		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
U 238 Upper	U	238	U above linear range - NR
Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58X

Sample Description: Sample Duplicate
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:05:27
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58X.042
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 42
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72455.442	~~ug/L~~ ug/kg	69694.289
⌈	Be	9	312.8647	4.45	284.006	ug/L	6.333
|	Al	27	5940272.8424	0.05	142761177.377	ug/L	2518.581
|>	Sc	45			387929.968	ug/L	252668.537
|	V	51	12331.5034	2.68	790171.830	ug/L	2542.719
|	Cr	52	11600.0932	1.47	682916.961	ug/L	11947.452
|	Mn	55	189692.4552	4.67	17402082.639	ug/L	1899.145
|	Fe	57	7806075.4522	3.54	14775622.393	ug/L	27588.888
|	Co	59	6198.7038	3.94	458982.044	ug/L	184.336
|	Ni	60	5002.0605	3.51	78253.775	ug/L	249.609
⌊	Cu	65	12356.3975	2.44	204649.579	ug/L	194.705
⌈>	Ge	72			504572.528	ug/L	464105.392
|	Zn	68	141425.5256	2.19	593229.626	ug/L	187.336
|	As	75	177256.5575	0.56	1519217.325	ug/L	-2.749
⌊	Se	82	616.0437	7.43	512.117	ug/L	23.487
	Y	89			1956664.861	ug/L	318171.800
⌈	Mo	97	1068.4551	1.68	10087.329	ug/L	87.334
|	Ag	107	849.6394	0.35	26910.591	ug/L	119.002
|>	In	115			372247.935	ug/L	364482.175
|	Cd	111	6126.1086	1.60	46469.162	ug/L	10.159
|	Sn	117	863.0789	1.29	5885.271	ug/L	105.668
|	Sb	121	598.9745	2.75	16000.453	ug/L	859.368
⌊	Ba	135	127882.4666	2.11	659549.970	ug/L	20.000
	Tb	159			272850.183	ug/L	234784.365
⌈>	Ho	165			236197.255	ug/L	216156.303
|	Tl	205	278.8323	1.95	8783.788	ug/L	59.334
|	Pb	208	147186.3046	0.47	5938464.181	ug/L	265.337
⌊	U	238	2214.0770	2.91	71463.522	ug/L	26.000

	Bi	209			123698.014	ug/L	117566.377
⌈>	Sc	45			387929.968	ug/L	252668.537
|	Cr	50	73823.7228	6.80	185010.031	ug/L	333.526
L	Cr	53	11515.7014	3.52	82347.822	ug/L	1725.788
⌈	Ni	61	11986.8890	0.62	6523.889	ug/L	1098.387
|	Cu	63	19172.1504	0.75	443707.211	ug/L	347.674
|	Br	79			10427.260	ug/L	800.364
L>	Ge	74			681062.126	ug/L	663076.519
⌈	Ag	109	853.1823	1.93	25211.817	ug/L	106.001
L>	In	115			372247.935	ug/L	364482.175
⌈	Pb	206	145188.6348	1.90	1500687.169	ug/L	68.668
|	Pb	207	145320.5199	3.10	1239890.027	ug/L	58.334
L>	Bi	209			123698.014	ug/L	117566.377
	Hg	200			1942.818	ug/L	23.667
	Pd	106			5276.179	ug/L	237.995
	Kr	83			450.012	ug/L	135.669
	Ti	48			13500561.319	ug/L	-2032.515
	Ca	44			3421748.624	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		153.533		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		108.719		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.131		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		109.272		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		153.533		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		102.712		
⌈	Ag	109				
⌊>	In	115		102.131		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		105.215		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX5K

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:09:52
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX5K.043
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 43
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72968.382	~~ug/L~~ mg/kg	69694.289
⌜	Be	9	392.1194	7.98	352.675	ug/L	6.333
|	Al	27	7479864.8395	1.79	179134341.577	ug/L	2518.581
|>	Sc	45			386515.011	ug/L	252668.537
|	V	51	13703.3285	5.85	874633.154	ug/L	2542.719
|	Cr	52	23014.9004	3.21	1332110.583	ug/L	11947.452
|	Mn	55	210285.0705	2.86	19238908.082	ug/L	1899.145
|	Fe	57	9234376.1711	1.73	17421825.994	ug/L	27588.888
|	Co	59	6166.1381	3.43	455180.944	ug/L	184.336
|	Ni	60	6144.1832	2.68	95741.077	ug/L	249.609
⌊	Cu	65	14043.0490	2.28	231848.200	ug/L	194.705
⌜>	Ge	72			522553.460	ug/L	464105.392
|	Zn	68	145299.9189	2.51	631023.850	ug/L	187.336
|	As	75	360288.0954	2.11	3196168.457	ug/L	-2.749
⌊	Se	82	777.9444	7.02	663.114	ug/L	23.487
	Y	89			2293157.986	ug/L	318171.800
⌜	Mo	97	951.1689	2.95	9455.556	ug/L	87.334
|	Ag	107	1041.9966	2.28	34687.743	ug/L	119.002
|>	In	115			391667.193	ug/L	364482.175
|	Cd	111	6109.8109	1.40	48759.057	ug/L	10.159
|	Sn	117	952.3792	0.26	6821.363	ug/L	105.668
|	Sb	121	490.2629	1.38	13945.276	ug/L	859.368
⌊	Ba	135	130012.5275	1.51	705441.561	ug/L	20.000
	Tb	159			278776.454	ug/L	234784.365
⌜>	Ho	165			238496.899	ug/L	216156.303
|	Tl	205	324.0739	1.44	10297.815	ug/L	59.334
|	Pb	208	151953.6103	1.00	6189244.674	ug/L	265.337
⌊	U	238	2703.7705	1.07	88083.682	ug/L	26.000

	Bi	209			125900.512	ug/L	117566.377
[>	Sc	45			386515.011	ug/L	252668.537
[	Cr	50	103208.3189	15.02	257334.658	ug/L	333.526
[	Cr	53	23625.9808	1.32	165709.801	ug/L	1725.788
[	Ni	61	15150.0003	4.26	8112.384	ug/L	1098.387
[	Cu	63	21549.7459	3.76	509042.065	ug/L	347.674
[	Br	79			12355.489	ug/L	800.364
[>	Ge	74			695681.919	ug/L	663076.519
[	Ag	109	1053.2638	1.63	32717.082	ug/L	106.001
[>	In	115			391667.193	ug/L	364482.175
[	Pb	206	149616.0442	1.28	1573950.985	ug/L	68.668
[	Pb	207	147936.4128	1.38	1284952.342	ug/L	58.334
[>	Bi	209			125900.512	ug/L	117566.377
	Hg	200			6525.889	ug/L	23.667
	Pd	106			7102.918	ug/L	237.995
	Kr	83			490.347	ug/L	135.669
	Ti	48			14070239.985	ug/L	-2032.515
	Ca	44			4710189.905	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		152.973		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		112.594		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		107.459		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		110.335		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		152.973		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		104.917		
	Ag	109				
>	In	115		107.459		
	Pb	206				
	Pb	207				
>	Bi	209		107.089		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:14:38
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.044
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			70259.106	ug/L	69694.289
⌈	Be	9	99.7869	1.75	5649.507	ug/L	6.333
|	Al	27	115.0606	0.58	180757.288	ug/L	2518.581
|>	Sc	45			250083.021	ug/L	252668.537
|	V	51	99.8331	3.89	412963.289	ug/L	2542.719
|	Cr	52	97.4620	2.65	371754.925	ug/L	11947.452
|	Mn	55	96.2347	2.94	571337.484	ug/L	1899.145
|	Fe	57	4730.2538	4.66	602884.645	ug/L	27588.888
|	Co	59	94.7350	6.03	452063.720	ug/L	184.336
|	Ni	60	97.0001	4.90	97582.249	ug/L	249.609
L	Cu	65	94.8572	4.14	101285.658	ug/L	194.705
⌈>	Ge	72			463846.077	ug/L	464105.392
|	Zn	68	97.6753	2.52	37831.748	ug/L	187.336
|	As	75	101.8354	3.17	80177.021	ug/L	-2.749
L	Se	82	102.7749	4.76	7486.163	ug/L	23.487
	Y	89			325414.287	ug/L	318171.800
⌈	Mo	97	104.7806	2.42	93931.097	ug/L	87.334
|	Ag	107	101.3105	1.20	305894.333	ug/L	119.002
|>	In	115			356371.178	ug/L	364482.175
|	Cd	111	100.0987	1.71	72671.860	ug/L	10.159
|	Sn	117	101.2667	2.50	65008.684	ug/L	105.668
|	Sb	121	98.8531	1.24	239790.154	ug/L	859.368
L	Ba	135	100.9314	0.37	49852.341	ug/L	20.000
	Tb	159			227388.393	ug/L	234784.365
⌈>	Ho	165			207387.399	ug/L	216156.303
|	Tl	205	98.1551	0.90	269569.642	ug/L	59.334
|	Pb	208	97.3069	1.97	344888.839	ug/L	265.337
L	U	238	98.8383	3.05	279906.218	ug/L	26.000

	Bi	209			109990.773	ug/L	117566.377
⌈>	Sc	45			250083.021	ug/L	252668.537
|	Cr	50	98.0635	1.42	16139.728	ug/L	333.526
L	Cr	53	98.2297	2.19	45560.003	ug/L	1725.788
⌈	Ni	61	103.4294	3.36	5449.427	ug/L	1098.387
|	Cu	63	100.8045	3.07	219984.724	ug/L	347.674
|	Br	79			2277.539	ug/L	800.364
L>	Ge	74			641956.458	ug/L	663076.519
⌈	Ag	109	101.1531	1.59	285013.318	ug/L	106.001
L>	In	115			356371.178	ug/L	364482.175
⌈	Pb	206	99.9776	1.61	91938.168	ug/L	68.668
|	Pb	207	100.2246	1.96	76092.548	ug/L	58.334
L>	Bi	209			109990.773	ug/L	117566.377
	Hg	200			44.001	ug/L	23.667
	Pd	106			313.817	ug/L	237.995
	Kr	83			147.669	ug/L	135.669
	Ti	48			365.128	ug/L	-2032.515
	Ca	44			29288.291	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9	99.787			
	Al	27	115.061			
>	Sc	45		98.977		
	V	51	99.833			
	Cr	52	97.462			
	Mn	55	96.235			
	Fe	57	94.605			
	Co	59	94.735			
	Ni	60	97.000			
	Cu	65	94.857			
>	Ge	72		99.944		
	Zn	68	97.675			
	As	75	101.835			
	Se	82	102.775			
	Y	89				
	Mo	97	104.781			
	Ag	107	101.310			
>	In	115		97.775		
	Cd	111	100.099			
	Sn	117	101.267			
	Sb	121	98.853			
	Ba	135	100.931			
	Tb	159				
>	Ho	165		95.943		
	Tl	205	98.155			
	Pb	208	97.307			
	U	238	98.838			
	Bi	209				
>	Sc	45		98.977		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		96.815		
	Ag	109				
>	In	115		97.775		
	Pb	206				
	Pb	207				
>	Bi	209		93.556		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	CCV is out of limits (+/- 10%) – NR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:22:46
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.045
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			72932.813	ug/L	69694.289
⌜	Be	9	0.0329	80.25	8.333	ug/L	6.333
|	Al	27	2.7184	73.37	6879.965	ug/L	2518.581
|>	Sc	45			256394.396	ug/L	252668.537
|	V	51	0.1249	10.54	3107.179	ug/L	2542.719
|	Cr	52	0.1977	35.21	12871.259	ug/L	11947.452
|	Mn	55	0.0973	52.33	2518.583	ug/L	1899.145
|	Fe	57	47.4117	18.32	33908.442	ug/L	27588.888
|	Co	59	0.0166	13.96	268.339	ug/L	184.336
|	Ni	60	0.0118	6.77	265.447	ug/L	249.609
⌊	Cu	65	0.0336	21.75	234.241	ug/L	194.705
⌜>	Ge	72			481073.497	ug/L	464105.392
|	Zn	68	0.2819	28.39	306.340	ug/L	187.336
|	As	75	0.1261	66.37	100.653	ug/L	-2.749
⌊	Se	82	-0.2063	91.87	9.067	ug/L	23.487
	Y	89			335307.243	ug/L	318171.800
⌜	Mo	97	0.0649	49.20	149.002	ug/L	87.334
|	Ag	107	0.0431	40.33	255.338	ug/L	119.002
|>	In	115			368941.891	ug/L	364482.175
|	Cd	111	0.0144	50.77	21.036	ug/L	10.159
|	Sn	117	0.1937	29.09	236.004	ug/L	105.668
|	Sb	121	0.7496	41.18	2750.307	ug/L	859.368
⌊	Ba	135	0.0599	82.96	50.667	ug/L	20.000
	Tb	159			235720.172	ug/L	234784.365
⌜>	Ho	165			212475.222	ug/L	216156.303
|	Tl	205	0.0123	3.60	93.001	ug/L	59.334
|	Pb	208	0.0709	45.95	518.009	ug/L	265.337
⌊	U	238	0.0283	13.47	107.668	ug/L	26.000

	Bi	209			111058.509	ug/L	117566.377
⌈>	Sc	45			256394.396	ug/L	252668.537
|	Cr	50	0.0586	476.54	347.954	ug/L	333.526
⌊	Cr	53	-0.8463	4.79	1363.745	ug/L	1725.788
⌈	Ni	61	3.0014	66.48	1253.401	ug/L	1098.387
|	Cu	63	0.0455	23.24	458.679	ug/L	347.674
|	Br	79			1109.388	ug/L	800.364
⌊>	Ge	74			676087.190	ug/L	663076.519
⌈	Ag	109	0.0381	33.12	218.337	ug/L	106.001
⌊>	In	115			368941.891	ug/L	364482.175
⌈	Pb	206	0.0828	43.30	142.002	ug/L	68.668
|	Pb	207	0.0771	24.52	114.335	ug/L	58.334
⌊>	Bi	209			111058.509	ug/L	117566.377
	Hg	200			26.667	ug/L	23.667
	Pd	106			218.587	ug/L	237.995
	Kr	83			145.669	ug/L	135.669
	Ti	48			-1440.579	ug/L	-2032.515
	Ca	44			28062.149	ug/L	30991.224

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		101.475		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		103.656		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.224		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.297		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		101.475		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.962		
⌈	Ag	109				
⌊>	In	115		101.224		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		94.465		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Reslope before continuing analytical run

Corrective action was taken as stated in method 6020 section 7.8

..."During the course of an analytical run, the instrument may be "resloped" or recalibrated to correct for instrument drift. A recalibration must then be followed immediately by a new analysis of a CCV and CCB before any further samples are analyzed."

Analyst: O Roberts

Date: 2-2-99

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Blank

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:29:28
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Blank.046
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			73248.534	ug/L	
⌜	Be	9			5.000	ug/L	
|	Al	27			4556.444	ug/L	
|>	Sc	45			257105.381	ug/L	
|	V	51			3124.747	ug/L	
|	Cr	52			13215.244	ug/L	
|	Mn	55			2047.167	ug/L	
|	Fe	57			35415.788	ug/L	
|	Co	59			200.337	ug/L	
|	Ni	60			283.229	ug/L	
⌞	Cu	65			229.671	ug/L	
⌜>	Ge	72			486473.824	ug/L	
|	Zn	68			276.672	ug/L	
|	As	75			-82.212	ug/L	
⌞	Se	82			1.429	ug/L	
	Y	89			335585.831	ug/L	
⌜	Mo	97			80.001	ug/L	
|	Ag	107			92.668	ug/L	
|>	In	115			376694.043	ug/L	
|	Cd	111			14.507	ug/L	
|	Sn	117			110.002	ug/L	
|	Sb	121			1011.713	ug/L	
⌞	Ba	135			28.334	ug/L	
	Tb	159			235775.390	ug/L	
⌜>	Ho	165			211815.137	ug/L	
|	Tl	205			57.667	ug/L	
|	Pb	208			383.339	ug/L	
⌞	U	238			34.000	ug/L	

	Bi	209	112592.207	ug/L
⌈>	Sc	45	257105.381	ug/L
|	Cr	50	337.578	ug/L
⌊	Cr	53	1370.746	ug/L
⌈	Ni	61	1280.404	ug/L
|	Cu	63	447.012	ug/L
|	Br	79	946.374	ug/L
⌊>	Ge	74	683518.200	ug/L
⌈	Ag	109	100.335	ug/L
⌊>	In	115	376694.043	ug/L
⌈	Pb	206	102.335	ug/L
|	Pb	207	86.334	ug/L
⌊>	Bi	209	112592.207	ug/L
	Hg	200	23.667	ug/L
	Pd	106	215.238	ug/L
	Kr	83	142.335	ug/L
	Ti	48	-1732.006	ug/L
	Ca	44	28609.572	ug/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Standard 1

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:33:59
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\Standard 1.047
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 2
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74867.257	ug/L	73248.534
⌜	Be	9	99.1762	3.86	6043.007	ug/L	5.000
|	Al	27	106.2552	2.36	181943.817	ug/L	4556.444
|>	Sc	45			269146.825	ug/L	257105.381
|	V	51	95.7524	2.19	427011.965	ug/L	3124.747
|	Cr	52	95.5996	2.71	393845.058	ug/L	13215.244
|	Mn	55	96.9815	1.43	619934.383	ug/L	2047.167
|	Fe	57	4790.3816	2.72	664709.788	ug/L	35415.788
|	Co	59	97.4900	2.06	501069.168	ug/L	200.337
|	Ni	60	98.4898	1.82	106734.370	ug/L	283.229
⌞	Cu	65	96.1283	0.13	110586.213	ug/L	229.671
⌜>	Ge	72			502511.630	ug/L	486473.824
|	Zn	68	99.5516	1.20	41871.735	ug/L	276.672
|	As	75	99.5149	0.99	84863.520	ug/L	-82.212
⌞	Se	82	100.5746	1.66	7919.419	ug/L	1.429
	Y	89			345077.712	ug/L	335585.831
⌜	Mo	97	103.2806	2.04	97883.239	ug/L	80.001
|	Ag	107	100.7852	1.10	321690.945	ug/L	92.668
|>	In	115			376739.446	ug/L	376694.043
|	Cd	111	99.9839	0.35	76752.692	ug/L	14.507
|	Sn	117	100.7622	1.51	68376.310	ug/L	110.002
|	Sb	121	98.4817	2.88	252632.364	ug/L	1011.713
⌞	Ba	135	99.5611	1.55	51991.298	ug/L	28.334
	Tb	159			238948.872	ug/L	235775.390
⌜>	Ho	165			216958.624	ug/L	211815.137
|	Tl	205	99.2750	1.18	285258.215	ug/L	57.667
|	Pb	208	99.0633	2.41	367506.363	ug/L	383.339
⌞	U	238	98.3809	3.85	291556.961	ug/L	34.000

	Bi	209			116090.421	ug/L	112592.207
⌈>	Sc	45			269146.825	ug/L	257105.381
|	Cr	50	97.0631	1.58	17194.513	ug/L	337.578
L	Cr	53	96.5881	2.78	47850.534	ug/L	1370.746
⌈	Ni	61	103.2918	1.85	6152.386	ug/L	1280.404
|	Cu	63	99.0261	2.56	238294.826	ug/L	447.012
|	Br	79			911.372	ug/L	946.374
L>	Ge	74			707321.770	ug/L	683518.200
⌈	Ag	109	99.4403	1.95	296202.838	ug/L	100.335
L>	In	115			376739.446	ug/L	376694.043
⌈	Pb	206	100.9335	1.55	97991.375	ug/L	102.335
|	Pb	207	101.3241	1.39	81223.493	ug/L	86.334
L>	Bi	209			116090.421	ug/L	112592.207
	Hg	200			21.000	ug/L	23.667
	Pd	106			332.755	ug/L	215.238
	Kr	83			146.002	ug/L	142.335
	Ti	48			-1498.968	ug/L	-1732.006
	Ca	44			29408.868	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:38:43
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.048
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			73292.608	ug/L	73248.534
⌜	Be	9	99.6878	1.51	5864.596	ug/L	5.000
|	Al	27	98.1133	3.13	173806.094	ug/L	4556.444
|>	Sc	45			262042.453	ug/L	257105.381
|	V	51	102.9710	1.38	428070.057	ug/L	3124.747
|	Cr	52	101.1768	1.44	387853.948	ug/L	13215.244
|	Mn	55	102.3046	1.25	617636.779	ug/L	2047.167
|	Fe	57	5102.6523	4.61	659659.471	ug/L	35415.788
|	Co	59	101.0112	4.16	492762.503	ug/L	200.337
|	Ni	60	100.2027	2.07	104128.671	ug/L	283.229
⌊	Cu	65	103.0780	0.43	110980.607	ug/L	229.671
⌜>	Ge	72			489405.525	ug/L	486473.824
|	Zn	68	99.8339	2.46	40695.626	ug/L	276.672
|	As	75	100.2995	2.28	82860.074	ug/L	-82.212
⌊	Se	82	100.5118	4.33	7751.412	ug/L	1.429
	Y	89			336919.221	ug/L	335585.831
⌜	Mo	97	97.8224	4.28	95669.550	ug/L	80.001
|	Ag	107	98.0391	1.55	315164.790	ug/L	92.668
|>	In	115			376445.422	ug/L	376694.043
|	Cd	111	98.9948	0.57	75924.358	ug/L	14.507
|	Sn	117	99.2797	0.99	67831.711	ug/L	110.002
|	Sb	121	100.0806	2.63	252620.073	ug/L	1011.713
⌊	Ba	135	97.6519	1.70	50728.084	ug/L	28.334
	Tb	159			239001.474	ug/L	235775.390
⌜>	Ho	165			213886.494	ug/L	211815.137
|	Tl	205	100.1340	1.07	281522.854	ug/L	57.667
|	Pb	208	99.7272	1.65	361193.504	ug/L	383.339
⌊	U	238	101.0253	2.62	290213.563	ug/L	34.000

	Bi	209			114197.156	ug/L	112592.207
⌈>	Sc	45			262042.453	ug/L	257105.381
|	Cr	50	102.3786	1.65	17135.118	ug/L	337.578
L	Cr	53	101.7939	2.89	47386.606	ug/L	1370.746
⌈	Ni	61	100.5626	1.21	5975.644	ug/L	1280.404
|	Cu	63	102.3514	2.32	235711.493	ug/L	447.012
|	Br	79			820.698	ug/L	946.374
L>	Ge	74			683895.899	ug/L	683518.200
⌈	Ag	109	99.9546	1.57	295888.311	ug/L	100.335
L>	In	115			376445.422	ug/L	376694.043
⌈	Pb	206	99.4836	0.83	95938.450	ug/L	102.335
|	Pb	207	100.2582	1.13	80137.345	ug/L	86.334
L>	Bi	209			114197.156	ug/L	112592.207
	Hg	200			18.000	ug/L	23.667
	Pd	106			342.708	ug/L	215.238
	Kr	83			135.335	ug/L	142.335
	Ti	48			-1506.629	ug/L	-1732.006
	Ca	44			29051.803	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	99.688			
|	Al	27	98.113			
|>	Sc	45		101.920		
|	V	51	102.971			
|	Cr	52	101.177			
|	Mn	55	102.305			
|	Fe	57	102.053			
|	Co	59	101.011			
|	Ni	60	100.203			
⌊	Cu	65	103.078			
⌈>	Ge	72		100.603		
|	Zn	68	99.834			
|	As	75	100.300			
⌊	Se	82	100.512			
	Y	89				
⌈	Mo	97	97.822			
|	Ag	107	98.039			
|>	In	115		99.934		
|	Cd	111	98.995			
|	Sn	117	99.280			
|	Sb	121	100.081			
⌊	Ba	135	97.652			
	Tb	159				
⌈>	Ho	165		100.978		
|	Tl	205	100.134			
|	Pb	208	99.727			
⌊	U	238	101.025			
	Bi	209				
⌈>	Sc	45		101.920		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.055		
⌈	Ag	109				
⌊>	In	115		99.934		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.425		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description: Reslope before continuing run
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 12:43:25
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.049
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74711.937	ug/L	73248.534
⌜	Be	9	0.0331	16.09	7.333	ug/L	5.000
|	Al	27	-0.1747	146.63	4519.099	ug/L	4556.444
|>	Sc	45			272585.273	ug/L	257105.381
|	V	51	-0.0321	122.20	3171.392	ug/L	3124.747
|	Cr	52	-0.2065	69.64	13207.572	ug/L	13215.244
|	Mn	55	-0.0026	331.35	2154.184	ug/L	2047.167
|	Fe	57	-26.1868	6.16	34218.131	ug/L	35415.788
|	Co	59	0.0101	60.99	263.338	ug/L	200.337
|	Ni	60	-0.0287	34.77	269.267	ug/L	283.229
⌊	Cu	65	0.0020	185.38	245.707	ug/L	229.671
⌈>	Ge	72			502775.046	ug/L	486473.824
|	Zn	68	0.0335	209.47	300.340	ug/L	276.672
|	As	75	-0.0185	99.72	-100.860	ug/L	-82.212
⌊	Se	82	0.1592	72.51	14.160	ug/L	1.429
	Y	89			345206.027	ug/L	335585.831
⌈	Mo	97	0.0758	22.77	151.336	ug/L	80.001
|	Ag	107	0.0450	20.08	233.004	ug/L	92.668
|>	In	115			369915.386	ug/L	376694.043
|	Cd	111	0.0099	60.75	21.698	ug/L	14.507
|	Sn	117	0.2327	13.80	264.005	ug/L	110.002
|	Sb	121	0.7263	38.48	2788.978	ug/L	1011.713
⌊	Ba	135	0.0108	94.13	33.334	ug/L	28.334
	Tb	159			236290.491	ug/L	235775.390
⌈>	Ho	165			213986.219	ug/L	211815.137
|	Tl	205	0.0096	106.51	85.334	ug/L	57.667
|	Pb	208	-0.0082	16.98	357.672	ug/L	383.339
⌊	U	238	0.0232	39.96	101.001	ug/L	34.000

	Bi	209			114315.051	ug/L	112592.207
⌈>	Sc	45			272585.273	ug/L	257105.381
|	Cr	50	-0.2324	56.87	318.250	ug/L	337.578
L	Cr	53	-0.1761	58.82	1369.413	ug/L	1370.746
⌈	Ni	61	0.0914	719.67	1307.740	ug/L	1280.404
|	Cu	63	0.0022	247.99	460.679	ug/L	447.012
|	Br	79			739.027	ug/L	946.374
L>	Ge	74			696149.404	ug/L	683518.200
⌈	Ag	109	0.0380	20.84	209.004	ug/L	100.335
L>	In	115			369915.386	ug/L	376694.043
⌈	Pb	206	-0.0113	109.85	93.001	ug/L	102.335
|	Pb	207	-0.0113	35.55	78.668	ug/L	86.334
L>	Bi	209			114315.051	ug/L	112592.207
	Hg	200			22.334	ug/L	23.667
	Pd	106			230.522	ug/L	215.238
	Kr	83			135.002	ug/L	142.335
	Ti	48			-1811.329	ug/L	-1732.006
	Ca	44			28512.714	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		106.021		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		103.351		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.200		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		101.025		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		106.021		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.848		
⌈	Ag	109				
⌊>	In	115		98.200		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.530		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4K

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:47:50
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4K.050
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 55
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 5e+002
Sample Prep Volume (mL): 5e+001
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10X

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75459.566	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	498.0459	21.51	39.667	ug/L	5.000
|	Al	27	9035264.1207	1.56	18135228.608	ug/L	4556.444
|>	Sc	45			287653.638	ug/L	257105.381
|	V	51	23120.3072	3.17	114573.066	ug/L	3124.747
|	Cr	52	29168.1381	4.57	140483.565	ug/L	13215.244
|	Mn	55	291514.1806	7.19	2044915.684	ug/L	2047.167
|	Fe	57	12048021.6004	1.86	1754050.458	ug/L	35415.788
|	Co	59	14885.0004	1.87	84704.009	ug/L	200.337
|	Ni	60	10663.4686	1.99	13176.432	ug/L	283.229
⌞	Cu	65	28615.3781	1.74	36021.199	ug/L	229.671
⌜>	Ge	72			507985.171	ug/L	486473.824
|	Zn	68	241019.3833	1.21	107680.213	ug/L	276.672
|	As	75	460899.6760	1.47	419323.990	ug/L	-82.212
⌞	Se	82	1319.3366	17.72	113.078	ug/L	1.429
	Y	89			523807.702	ug/L	335585.831
⌜	Mo	97	3514.2115	1.42	3805.212	ug/L	80.001
|	Ag	107	2318.7580	2.72	8176.424	ug/L	92.668
|>	In	115			385118.220	ug/L	376694.043
|	Cd	111	6907.5998	2.47	5755.943	ug/L	14.507
|	Sn	117	1133.6002	7.81	951.041	ug/L	110.002
|	Sb	121	1590.5892	6.00	5365.728	ug/L	1011.713
⌞	Ba	135	173549.3090	1.73	97718.134	ug/L	28.334
	Tb	159			240983.312	ug/L	235775.390
⌜>	Ho	165			217744.482	ug/L	211815.137
|	Tl	205	507.4475	1.12	1598.772	ug/L	57.667
|	Pb	208	316967.1584	0.48	1238276.016	ug/L	383.339
⌞	U	238	4717.2972	1.36	14663.669	ug/L	34.000

	Bi	209			115149.144	ug/L	112592.207
┌>	Sc	45			287653.638	ug/L	257105.381
┌	Cr	50	108287.9516	20.65	21099.066	ug/L	337.578
└	Cr	53	28636.8657	2.47	16598.481	ug/L	1370.746
┌	Ni	61	18384.1127	4.06	2267.869	ug/L	1280.404
┌	Cu	63	30848.4961	0.87	78337.184	ug/L	447.012
┌	Br	79			2169.520	ug/L	946.374
└>	Ge	74			708156.108	ug/L	683518.200
┌	Ag	109	2353.1623	2.73	7651.126	ug/L	100.335
└>	In	115			385118.220	ug/L	376694.043
┌	Pb	206	324114.8843	1.41	333747.599	ug/L	102.335
┌	Pb	207	319010.2033	2.36	272235.837	ug/L	86.334
└>	Bi	209			115149.144	ug/L	112592.207
	Hg	200			719.359	ug/L	23.667
	Pd	106			897.244	ug/L	215.238
	Kr	83			183.003	ug/L	142.335
	Ti	48			1416605.451	ug/L	-1732.006
	Ca	44			950337.830	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		111.882		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		104.422		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.236		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		102.799		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		111.882		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		103.605		
⌈	Ag	109				
⌊>	In	115		102.236		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		102.271		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range
Zn 68 Upper	Zn	68	Zn above linear range
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range

> NR

> ok Table does not account for DF

2-2-99 DBR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4N

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:52:14
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4N.051
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 56
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001

10 x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75624.748	~~ug/L~~ ug/Kg	73248.534
⌜	Be	9	378.3772	35.40	30.000	ug/L	5.000
|	Al	27	7369323.8961	0.46	13929635.535	ug/L	4556.444
|>	Sc	45			287052.359	ug/L	257105.381
|	V	51	19868.5718	4.57	93266.128	ug/L	3124.747
|	Cr	52	20842.7910	1.56	99245.944	ug/L	13215.244
|	Mn	55	235928.0667	1.84	1556907.150	ug/L	2047.167
|	Fe	57	11360816.1195	2.79	1560911.891	ug/L	35415.788
|	Co	59	14533.7367	1.33	77873.164	ug/L	200.337
|	Ni	60	9657.4761	2.19	11279.117	ug/L	283.229
⌊	Cu	65	29618.5143	1.96	35120.413	ug/L	229.671
⌜>	Ge	72			515274.085	ug/L	486473.824
|	Zn	68	283070.5180	2.47	120940.856	ug/L	276.672
|	As	75	499319.6074	2.64	434625.392	ug/L	-82.212
⌊	Se	82	939.8298	22.28	77.466	ug/L	1.429
	Y	89			501717.836	ug/L	335585.831
⌜	Mo	97	2959.6295	1.88	2986.675	ug/L	80.001
|	Ag	107	521.1219	3.47	1775.795	ug/L	92.668
|>	In	115			378316.868	ug/L	376694.043
|	Cd	111	6064.7282	0.45	4688.178	ug/L	14.507
|	Sn	117	721.6389	4.35	605.352	ug/L	110.002
|	Sb	121	1483.8802	1.74	4766.176	ug/L	1011.713
⌊	Ba	135	143683.0444	2.32	75020.386	ug/L	28.334
	Tb	159			243578.260	ug/L	235775.390
⌜>	Ho	165			219258.305	ug/L	211815.137
|	Tl	205	427.7518	2.19	1293.072	ug/L	57.667
|	Pb	208	238330.8798	2.29	884186.702	ug/L	383.339
⌊	U	238	2736.7874	2.99	8093.373	ug/L	34.000

	Bi	209			116229.804	ug/L	112592.207
⌈>	Sc	45			287052.359	ug/L	257105.381
|	Cr	50	93200.8278	0.64	17122.958	ug/L	337.578
L	Cr	53	19540.9089	2.13	11202.837	ug/L	1370.746
⌈	Ni	61	14594.5837	11.64	2067.504	ug/L	1280.404
|	Cu	63	30772.7284	1.56	75062.595	ug/L	447.012
|	Br	79			1567.102	ug/L	946.374
L>	Ge	74			720742.133	ug/L	683518.200
⌈	Ag	109	562.6903	2.45	1774.128	ug/L	100.335
L>	In	115			378316.868	ug/L	376694.043
⌈	Pb	206	243190.5435	1.86	238516.111	ug/L	102.335
|	Pb	207	237232.6587	1.74	192852.825	ug/L	86.334
L>	Bi	209			116229.804	ug/L	112592.207
	Hg	200			677.690	ug/L	23.667
	Pd	106			619.973	ug/L	215.238
	Kr	83			176.670	ug/L	142.335
	Ti	48			1110865.868	ug/L	-1732.006
	Ca	44			601604.835	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		111.648		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		105.920		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		100.431		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		103.514		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		111.648		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		105.446		
	Ag	109				
>	In	115		100.431		
	Pb	206				
	Pb	207				
>	Bi	209		103.231		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Fe 57 Upper	Fe	57	Fe over linear range	> UR
Zn 68 Upper	Zn	68	Zn above linear range	
As 75 Upper	As	75	As above linear range	> OK
Pb 208 Upper	Pb	208	Pb above linear range	

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4R

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 12:56:39
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4R.052
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 57
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001

10x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75254.154	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	384.0177	28.98	30.667	ug/L	5.000
|	Al	27	7726504.1527	3.53	14701050.250	ug/L	4556.444
|>	Sc	45			289035.921	ug/L	257105.381
|	V	51	19572.1892	5.51	92511.578	ug/L	3124.747
|	Cr	52	24047.4676	5.79	112919.146	ug/L	13215.244
|	Mn	55	189982.1775	2.28	1262505.604	ug/L	2047.167
|	Fe	57	10483993.6468	4.66	1452519.103	ug/L	35415.788
|	Co	59	12605.6090	5.79	67971.766	ug/L	200.337
|	Ni	60	9536.2098	4.76	11210.861	ug/L	283.229
⌊	Cu	65	24863.4570	3.46	29700.963	ug/L	229.671
⌈>	Ge	72			506986.653	ug/L	486473.824
|	Zn	68	196211.7507	0.67	82611.667	ug/L	276.672
|	As	75	295752.2412	0.14	253383.707	ug/L	-82.212
⌊	Se	82	864.1676	28.75	70.483	ug/L	1.429
	Y	89			489689.856	ug/L	335585.831
⌈	Mo	97	2740.4148	0.67	2804.637	ug/L	80.001
|	Ag	107	295.4054	4.01	1059.717	ug/L	92.668
|>	In	115			382760.810	ug/L	376694.043
|	Cd	111	8275.0338	0.89	6466.255	ug/L	14.507
|	Sn	117	804.8410	7.60	669.689	ug/L	110.002
|	Sb	121	1046.2374	1.22	3702.517	ug/L	1011.713
⌊	Ba	135	153322.0105	1.10	80977.056	ug/L	28.334
	Tb	159			244326.197	ug/L	235775.390
⌈>	Ho	165			220349.338	ug/L	211815.137
|	Tl	205	486.2830	2.91	1468.757	ug/L	57.667
|	Pb	208	347785.8351	1.41	1297062.215	ug/L	383.339
⌊	U	238	3936.4100	1.33	11689.231	ug/L	34.000

	Bi	209			115631.635	ug/L	112592.207
⌈>	Sc	45			289035.921	ug/L	257105.381
|	Cr	50	105470.9679	20.80	19394.091	ug/L	337.578
L	Cr	53	23017.3679	4.16	13006.382	ug/L	1370.746
⌈	Ni	61	14206.8382	1.08	2009.495	ug/L	1280.404
|	Cu	63	27188.8994	1.01	65077.560	ug/L	447.012
|	Br	79			1814.467	ug/L	946.374
L>	Ge	74			706790.810	ug/L	683518.200
⌈	Ag	109	316.8936	4.45	1055.050	ug/L	100.335
L>	In	115			382760.810	ug/L	376694.043
⌈	Pb	206	358312.0761	1.03	349587.164	ug/L	102.335
|	Pb	207	351710.9009	0.63	284411.280	ug/L	86.334
L>	Bi	209			115631.635	ug/L	112592.207
	Hg	200			690.357	ug/L	23.667
	Pd	106			727.062	ug/L	215.238
	Kr	83			174.669	ug/L	142.335
	Ti	48			1188646.025	ug/L	-1732.006
	Ca	44			616283.545	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		112.419		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		104.217		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.611		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		104.029		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		112.419		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		103.405		
⌈	Ag	109				
⌊>	In	115		101.611		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		102.700		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range — NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX4X

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:01:04
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX4X.053
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 58
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001

10 x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75760.788	~~ug/L~~ ng/kg	73248.534
[	Be	9	461.0669	40.17	36.000	ug/L	5.000
|	Al	27	8631550.5727	1.65	16654163.727	ug/L	4556.444
|>	Sc	45			293030.060	ug/L	257105.381
|	V	51	19468.9069	1.06	93408.085	ug/L	3124.747
|	Cr	52	23978.1931	2.52	114300.388	ug/L	13215.244
|	Mn	55	251610.5513	1.50	1695119.516	ug/L	2047.167
|	Fe	57	11083624.9419	2.77	1555729.208	ug/L	35415.788
|	Co	59	11504.0325	2.10	62976.841	ug/L	200.337
|	Ni	60	7586.6752	0.83	9116.529	ug/L	283.229
L	Cu	65	17578.2109	1.51	21379.493	ug/L	229.671
[>	Ge	72			523516.013	ug/L	486473.824
|	Zn	68	144889.9169	1.43	63066.200	ug/L	276.672
|	As	75	310547.6806	1.81	274703.700	ug/L	-82.212
L	Se	82	835.2726	15.95	70.381	ug/L	1.429
	Y	89			531301.834	ug/L	335585.831
[	Mo	97	1037.0080	3.55	1115.721	ug/L	80.001
|	Ag	107	1016.3657	2.96	3427.446	ug/L	92.668
|>	In	115			384155.389	ug/L	376694.043
|	Cd	111	6935.8951	1.05	5441.860	ug/L	14.507
|	Sn	117	928.6589	7.61	758.694	ug/L	110.002
|	Sb	121	351.5881	2.66	1933.817	ug/L	1011.713
L	Ba	135	127193.8006	1.46	67425.099	ug/L	28.334
	Tb	159			246451.233	ug/L	235775.390
[>	Ho	165			222745.008	ug/L	211815.137
|	Tl	205	367.0291	3.60	1135.390	ug/L	57.667
|	Pb	208	154560.0778	1.92	582928.082	ug/L	383.339
L	U	238	2892.7204	1.68	8693.398	ug/L	34.000

	Bi	209			115923.714	ug/L	112592.207
⌈>	Sc	45			293030.060	ug/L	257105.381
|	Cr	50	113619.9578	12.32	21221.999	ug/L	337.578
L	Cr	53	23273.9080	0.63	13325.345	ug/L	1370.746
⌈	Ni	61	10374.1150	2.53	1868.808	ug/L	1280.404
|	Cu	63	19129.3625	0.90	47039.140	ug/L	447.012
|	Br	79			1779.129	ug/L	946.374
L>	Ge	74			723929.569	ug/L	683518.200
⌈	Ag	109	1014.4267	2.73	3165.382	ug/L	100.335
L>	In	115			384155.389	ug/L	376694.043
⌈	Pb	206	160187.3210	0.67	156729.714	ug/L	102.335
|	Pb	207	157845.1086	1.06	128001.883	ug/L	86.334
L>	Bi	209			115923.714	ug/L	112592.207
	Hg	200			446.011	ug/L	23.667
	Pd	106			786.092	ug/L	215.238
	Kr	83			186.336	ug/L	142.335
	Ti	48			1350695.715	ug/L	-1732.006
	Ca	44			453973.654	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		113.973		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		107.614		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		101.981		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		105.160		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		113.973		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		105.912		
	Ag	109				
>	In	115		101.981		
	Pb	206				
	Pb	207				
>	Bi	209		102.959		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX51

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:05:29
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX51.054
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 59
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10 X

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77182.069	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	436.3182	17.27	34.000	ug/L	5.000
|	Al	27	8222413.1994	1.29	15730706.183	ug/L	4556.444
|>	Sc	45			290493.485	ug/L	257105.381
|	V	51	18902.7760	3.09	89958.375	ug/L	3124.747
|	Cr	52	23546.9787	3.34	111494.320	ug/L	13215.244
|	Mn	55	257308.9476	4.07	1717536.916	ug/L	2047.167
|	Fe	57	10549899.3270	4.67	1469131.306	ug/L	35415.788
|	Co	59	10808.3804	4.26	58624.323	ug/L	200.337
|	Ni	60	8973.0173	5.24	10619.763	ug/L	283.229
⌊	Cu	65	25870.6147	5.48	31036.694	ug/L	229.671
⌜>	Ge	72			511810.785	ug/L	486473.824
|	Zn	68	299842.6387	1.17	127292.580	ug/L	276.672
|	As	75	371761.2898	2.93	321521.163	ug/L	-82.212
⌊	Se	82	1319.4482	37.82	107.861	ug/L	1.429
	Y	89			517016.329	ug/L	335585.831
⌜	Mo	97	1876.0478	2.12	1948.152	ug/L	80.001
|	Ag	107	1141.4962	1.42	3828.885	ug/L	92.668
|>	In	115			383263.824	ug/L	376694.043
|	Cd	111	7879.2726	0.08	6165.831	ug/L	14.507
|	Sn	117	1010.8265	6.48	814.031	ug/L	110.002
|	Sb	121	729.7851	4.93	2897.323	ug/L	1011.713
⌊	Ba	135	131762.8229	0.62	69683.903	ug/L	28.334
	Tb	159			241450.512	ug/L	235775.390
⌜>	Ho	165			216866.412	ug/L	211815.137
|	Tl	205	429.9065	3.65	1284.404	ug/L	57.667
|	Pb	208	301058.4120	1.82	1104961.638	ug/L	383.339
⌊	U	238	2945.9576	0.63	8619.019	ug/L	34.000

	Bi	209			115258.631	ug/L	112592.207
[>	Sc	45			290493.485	ug/L	257105.381
I	Cr	50	114205.3123	8.35	21167.501	ug/L	337.578
L	Cr	53	23375.7733	4.75	13257.623	ug/L	1370.746
[	Ni	61	13386.4275	7.48	2007.161	ug/L	1280.404
I	Cu	63	27703.2550	2.26	67559.070	ug/L	447.012
I	Br	79			1684.116	ug/L	946.374
L>	Ge	74			720261.212	ug/L	683518.200
[	Ag	109	1177.1260	1.39	3648.169	ug/L	100.335
L>	In	115			383263.824	ug/L	376694.043
[	Pb	206	306422.0110	2.64	297969.173	ug/L	102.335
I	Pb	207	302500.3789	1.61	243822.001	ug/L	86.334
L>	Bi	209			115258.631	ug/L	112592.207
	Hg	200			371.675	ug/L	23.667
	Pd	106			657.891	ug/L	215.238
	Kr	83			169.669	ug/L	142.335
	Ti	48			1260149.485	ug/L	-1732.006
	Ca	44			662064.294	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		112.986		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		105.208		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.744		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		102.385		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		112.986		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		105.376		
⌈	Ag	109				
⌊>	In	115		101.744		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		102.368		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range	> NR
Zn 68 Upper	Zn	68	Zn above linear range	
As 75 Upper	As	75	As above linear range	> OK
Pb 208 Upper	Pb	208	Pb above linear range	

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX52

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:09:56
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX52.055
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 60
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 4e+002
Sample Prep Volume (mL): 5e+001
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78021.605	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	353.8338	29.07	25.667	ug/L	5.000
|	Al	27	6791598.1746	2.49	11356872.966	ug/L	4556.444
|>	Sc	45			288648.557	ug/L	257105.381
|	V	51	16838.1442	0.89	70858.523	ug/L	3124.747
|	Cr	52	28366.3368	3.02	116531.215	ug/L	13215.244
|	Mn	55	151737.3701	4.27	886318.323	ug/L	2047.167
|	Fe	57	9958557.2119	5.71	1218438.482	ug/L	35415.788
|	Co	59	14693.6096	5.65	69611.289	ug/L	200.337
|	Ni	60	10241.2749	3.58	10599.909	ug/L	283.229
L	Cu	65	31798.7260	4.12	33340.836	ug/L	229.671
⌜>	Ge	72			519068.182	ug/L	486473.824
|	Zn	68	235818.1286	0.53	89434.335	ug/L	276.672
|	As	75	764309.0306	1.03	590064.236	ug/L	-82.212
L	Se	82	1586.2287	14.69	115.533	ug/L	1.429
	Y	89			463812.078	ug/L	335585.831
⌜	Mo	97	4818.1863	3.80	4319.363	ug/L	80.001
|	Ag	107	478.3390	3.34	1478.425	ug/L	92.668
|>	In	115			385099.778	ug/L	376694.043
|	Cd	111	8469.4974	2.27	5862.294	ug/L	14.507
|	Sn	117	1283.6970	5.53	900.371	ug/L	110.002
|	Sb	121	3702.4888	0.40	9414.862	ug/L	1011.713
L	Ba	135	174196.6548	0.84	81450.358	ug/L	28.334
	Tb	159			242856.745	ug/L	235775.390
⌜>	Ho	165			216096.491	ug/L	211815.137
|	Tl	205	556.1050	1.48	1449.088	ug/L	57.667
|	Pb	208	379907.3498	1.95	1222658.994	ug/L	383.339
L	U	238	3213.4957	2.01	8244.461	ug/L	34.000

	Bi	209			116187.872	ug/L	112592.207
>	Sc	45			288648.557	ug/L	257105.381
	Cr	50	103529.7432	22.13	16752.491	ug/L	337.578
	Cr	53	26949.9153	1.60	13343.366	ug/L	1370.746
	Ni	61	13445.6561	21.04	1930.817	ug/L	1280.404
	Cu	63	33393.9464	1.11	71654.644	ug/L	447.012
	Br	79			2208.860	ug/L	946.374
>	Ge	74			720473.695	ug/L	683518.200
	Ag	109	504.1359	2.67	1445.421	ug/L	100.335
>	In	115			385099.778	ug/L	376694.043
	Pb	206	381257.0638	2.83	328808.349	ug/L	102.335
	Pb	207	374619.2928	2.79	267778.121	ug/L	86.334
>	Bi	209			116187.872	ug/L	112592.207
	Hg	200			798.030	ug/L	23.667
	Pd	106			648.733	ug/L	215.238
	Kr	83			169.003	ug/L	142.335
	Ti	48			1043951.284	ug/L	-1732.006
	Ca	44			552406.722	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		112.269		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		106.700		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.231		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		102.021		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		112.269		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		105.407		
⌈	Ag	109				
⌊>	In	115		102.231		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		103.194		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Zn 68 Upper	Zn	68	Zn above linear range - NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX53

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:14:22
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX53.056
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 61
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 0.5
Diluted To Volume (mL): 1e+001 20x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76103.304	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	510.4829	61.55	21.667	ug/L	5.000
|	Al	27	8691341.1742	1.66	8133705.351	ug/L	4556.444
|>	Sc	45			284231.390	ug/L	257105.381
|	V	51	20012.6294	1.63	48235.231	ug/L	3124.747
|	Cr	52	26684.6905	1.87	68177.770	ug/L	13215.244
|	Mn	55	241757.7626	0.10	791075.771	ug/L	2047.167
|	Fe	57	10861669.3762	1.23	759235.629	ug/L	35415.788
|	Co	59	17315.0085	2.17	46009.097	ug/L	200.337
|	Ni	60	8490.8943	1.40	5085.167	ug/L	283.229
⌊	Cu	65	24586.1901	2.30	14574.910	ug/L	229.671
⌈>	Ge	72			514459.878	ug/L	486473.824
|	Zn	68	194618.1289	1.90	41716.908	ug/L	276.672
|	As	75	1070459.3618	0.38	465367.985	ug/L	-82.212
⌊	Se	82	2074.3725	15.04	85.579	ug/L	1.429
	Y	89			449861.238	ug/L	335585.831
⌈	Mo	97	2069.3939	0.20	1104.054	ug/L	80.001
|	Ag	107	807.6889	2.41	1407.083	ug/L	92.668
|>	In	115			380882.209	ug/L	376694.043
|	Cd	111	8011.3710	1.47	3121.831	ug/L	14.507
|	Sn	117	1225.0575	6.94	533.682	ug/L	110.002
|	Sb	121	3174.7436	0.88	5060.947	ug/L	1011.713
⌊	Ba	135	147131.2269	0.60	38677.351	ug/L	28.334
	Tb	159			239254.415	ug/L	235775.390
⌈>	Ho	165			215876.373	ug/L	211815.137
|	Tl	205	452.0651	6.50	700.024	ug/L	57.667
|	Pb	208	288019.8693	1.37	526406.336	ug/L	383.339
⌊	U	238	3447.9495	1.13	5035.271	ug/L	34.000

	Bi	209			114140.321	ug/L	112592.207
⌈>	Sc	45			284231.390	ug/L	257105.381
|	Cr	50	123015.3686	13.72	11340.260	ug/L	337.578
L	Cr	53	25950.9713	1.50	7877.251	ug/L	1370.746
⌈	Ni	61	9274.4062	25.81	1571.102	ug/L	1280.404
|	Cu	63	25449.3061	2.92	31169.618	ug/L	447.012
|	Br	79			1624.109	ug/L	946.374
L>	Ge	74			717683.672	ug/L	683518.200
⌈	Ag	109	832.0094	3.74	1347.410	ug/L	100.335
L>	In	115			380882.209	ug/L	376694.043
⌈	Pb	206	295699.0878	0.72	142451.162	ug/L	102.335
|	Pb	207	287313.1816	0.63	114722.614	ug/L	86.334
L>	Bi	209			114140.321	ug/L	112592.207
	Hg	200			572.684	ug/L	23.667
	Pd	106			488.282	ug/L	215.238
	Kr	83			163.669	ug/L	142.335
	Ti	48			733580.219	ug/L	-1732.006
	Ca	44			257067.000	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		110.551		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		105.753		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.112		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		101.917		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		110.551		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		104.998		
⌈	Ag	109				
⌊>	In	115		101.112		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.375		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > O.K
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX54

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:18:48
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX54.057
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 62
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 0.5
Diluted To Volume (mL): 1e+001 20×

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74888.200	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	570.6892	36.36	23.334	ug/L	5.000
|	Al	27	9293350.5659	2.27	8562249.977	ug/L	4556.444
|>	Sc	45			279725.449	ug/L	257105.381
|	V	51	19709.2317	3.20	46806.621	ug/L	3124.747
|	Cr	52	42608.2630	1.54	98546.455	ug/L	13215.244
|	Mn	55	258372.8080	0.89	831860.210	ug/L	2047.167
|	Fe	57	11840204.5226	1.93	811114.392	ug/L	35415.788
|	Co	59	13531.1514	1.03	35445.280	ug/L	200.337
|	Ni	60	8722.4859	1.01	5133.654	ug/L	283.229
⌊	Cu	65	28198.8172	1.74	16418.182	ug/L	229.671
⌜>	Ge	72			519810.411	ug/L	486473.824
|	Zn	68	182215.1448	2.84	39479.557	ug/L	276.672
|	As	75	825726.2428	2.53	362669.024	ug/L	-82.212
⌊	Se	82	1370.4893	12.62	57.569	ug/L	1.429
	Y	89			440437.756	ug/L	335585.831
⌜	Mo	97	1327.9581	9.71	738.693	ug/L	80.001
|	Ag	107	1590.6652	2.73	2685.613	ug/L	92.668
|>	In	115			381609.834	ug/L	376694.043
|	Cd	111	7814.0854	1.50	3050.879	ug/L	14.507
|	Sn	117	1491.4363	3.40	627.353	ug/L	110.002
|	Sb	121	1284.9043	4.86	2663.275	ug/L	1011.713
⌊	Ba	135	156840.2890	1.98	41293.006	ug/L	28.334
	Tb	159			240916.189	ug/L	235775.390
⌜>	Ho	165			215386.817	ug/L	211815.137
|	Tl	205	398.1342	1.26	622.353	ug/L	57.667
|	Pb	208	512897.5266	2.34	934627.766	ug/L	383.339
⌊	U	238	3085.5720	5.06	4495.753	ug/L	34.000

	Bi	209			112533.971	ug/L	112592.207
⌈>	Sc	45			279725.449	ug/L	257105.381
|	Cr	50	139624.0604	3.59	12588.722	ug/L	337.578
L	Cr	53	42583.6012	1.96	11762.625	ug/L	1370.746
⌈	Ni	61	7577.0330	8.29	1538.098	ug/L	1280.404
|	Cu	63	28841.6757	2.08	35454.979	ug/L	447.012
|	Br	79			1355.078	ug/L	946.374
L>	Ge	74			721590.323	ug/L	683518.200
⌈	Ag	109	1617.2264	0.98	2526.915	ug/L	100.335
L>	In	115			381609.834	ug/L	376694.043
⌈	Pb	206	529306.0192	0.57	251322.032	ug/L	102.335
|	Pb	207	521777.7098	0.88	205337.229	ug/L	86.334
L>	Bi	209			112533.971	ug/L	112592.207
	Hg	200			409.677	ug/L	23.667
	Pd	106			501.949	ug/L	215.238
	Kr	83			164.669	ug/L	142.335
	Ti	48			658826.113	ug/L	-1732.006
	Ca	44			265898.075	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		108.798		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		106.853		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		101.305		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		101.686		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		108.798		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		105.570		
	Ag	109				
>	In	115		101.305		
	Pb	206				
	Pb	207				
>	Bi	209		99.948		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 13:23:33
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.058
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 0.5
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74160.494	ug/L	73248.534
⌜	Be	9	97.6666	1.90	5755.217	ug/L	5.000
|	Al	27	100.1965	1.63	177729.445	ug/L	4556.444
|>	Sc	45			262390.648	ug/L	257105.381
|	V	51	104.9772	0.96	437006.862	ug/L	3124.747
|	Cr	52	104.5012	1.89	400742.908	ug/L	13215.244
|	Mn	55	105.0970	3.13	635059.646	ug/L	2047.167
|	Fe	57	5272.8611	3.04	681511.275	ug/L	35415.788
|	Co	59	103.5331	2.86	505773.096	ug/L	200.337
|	Ni	60	101.8469	3.19	105980.906	ug/L	283.229
⌊	Cu	65	103.0621	2.86	111092.139	ug/L	229.671
⌈>	Ge	72			502426.973	ug/L	486473.824
|	Zn	68	99.6267	1.08	41702.551	ug/L	276.672
|	As	75	99.1909	1.58	84137.769	ug/L	-82.212
⌊	Se	82	99.0602	3.71	7840.640	ug/L	1.429
	Y	89			344558.914	ug/L	335585.831
⌈	Mo	97	100.1850	1.48	97144.828	ug/L	80.001
|	Ag	107	98.7770	1.13	314780.397	ug/L	92.668
|>	In	115			373214.254	ug/L	376694.043
|	Cd	111	98.2964	1.99	74732.795	ug/L	14.507
|	Sn	117	100.1577	1.10	67835.689	ug/L	110.002
|	Sb	121	99.7462	0.83	249646.964	ug/L	1011.713
⌊	Ba	135	99.3425	1.70	51165.315	ug/L	28.334
	Tb	159			234526.382	ug/L	235775.390
⌈>	Ho	165			210764.604	ug/L	211815.137
|	Tl	205	101.2975	0.80	280679.830	ug/L	57.667
|	Pb	208	100.6701	0.91	359395.579	ug/L	383.339
⌊	U	238	102.7120	3.18	290955.642	ug/L	34.000

	Bi	209			113192.427	ug/L	112592.207
⌈>	Sc	45			262390.648	ug/L	257105.381
|	Cr	50	102.8668	2.32	17236.092	ug/L	337.578
L	Cr	53	105.5272	1.62	49159.290	ug/L	1370.746
⌈	Ni	61	98.6184	0.94	6052.344	ug/L	1280.404
|	Cu	63	102.3292	1.52	242355.100	ug/L	447.012
|	Br	79			669.689	ug/L	946.374
L>	Ge	74			703319.779	ug/L	683518.200
⌈	Ag	109	99.7294	0.51	292658.261	ug/L	100.335
L>	In	115			373214.254	ug/L	376694.043
⌈	Pb	206	101.4870	1.23	96979.793	ug/L	102.335
|	Pb	207	99.4056	1.02	78737.577	ug/L	86.334
L>	Bi	209			113192.427	ug/L	112592.207
	Hg	200			18.334	ug/L	23.667
	Pd	106			351.723	ug/L	215.238
	Kr	83			154.336	ug/L	142.335
	Ti	48			-1402.694	ug/L	-1732.006
	Ca	44			27706.457	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9	97.667			
	Al	27	100.196			
>	Sc	45		102.056		
	V	51	104.977			
	Cr	52	104.501			
	Mn	55	105.097			
	Fe	57	105.457			
	Co	59	103.533			
	Ni	60	101.847			
	Cu	65	103.062			
>	Ge	72		103.279		
	Zn	68	99.627			
	As	75	99.191			
	Se	82	99.060			
	Y	89				
	Mo	97	100.185			
	Ag	107	98.777			
>	In	115		99.076		
	Cd	111	98.296			
	Sn	117	100.158			
	Sb	121	99.746			
	Ba	135	99.343			
	Tb	159				
>	Ho	165		99.504		
	Tl	205	101.297			
	Pb	208	100.670			
	U	238	102.712			
	Bi	209				
>	Sc	45		102.056		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		102.897		
	Ag	109				
>	In	115		99.076		
	Pb	206				
	Pb	207				
>	Bi	209		100.533		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 13:28:17
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 4.059
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 0.5
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75565.806	ug/L	73248.534
⌜	Be	9	-0.0051	319.40	5.000	ug/L	5.000
|	Al	27	-0.8378	18.38	3332.424	ug/L	4556.444
|>	Sc	45			273046.500	ug/L	257105.381
|	V	51	0.0247	90.01	3423.603	ug/L	3124.747
|	Cr	52	-0.0925	122.74	13673.679	ug/L	13215.244
|	Mn	55	-0.0174	72.54	2064.503	ug/L	2047.167
|	Fe	57	-22.7837	30.96	34699.995	ug/L	35415.788
|	Co	59	0.0003	872.46	214.337	ug/L	200.337
|	Ni	60	-0.0334	43.18	264.507	ug/L	283.229
⌊	Cu	65	-0.0226	69.53	218.743	ug/L	229.671
⌈>	Ge	72			507245.857	ug/L	486473.824
|	Zn	68	-0.2481	4.02	184.336	ug/L	276.672
|	As	75	-0.0546	141.34	-131.843	ug/L	-82.212
⌊	Se	82	0.0673	315.60	7.023	ug/L	1.429
	Y	89			354209.623	ug/L	335585.831
⌈	Mo	97	0.0551	37.51	132.002	ug/L	80.001
|	Ag	107	0.0278	50.76	179.336	ug/L	92.668
|>	In	115			371327.349	ug/L	376694.043
|	Cd	111	0.0067	21.56	19.403	ug/L	14.507
|	Sn	117	0.1223	60.03	190.670	ug/L	110.002
|	Sb	121	0.6520	42.57	2613.943	ug/L	1011.713
⌊	Ba	135	0.0008	873.34	28.334	ug/L	28.334
	Tb	159			230477.326	ug/L	235775.390
⌈>	Ho	165			210276.155	ug/L	211815.137
|	Tl	205	0.0033	168.04	66.334	ug/L	57.667
|	Pb	208	-0.0391	12.12	241.337	ug/L	383.339
⌊	U	238	0.0242	41.35	102.001	ug/L	34.000

	Bi	209			110552.234	ug/L	112592.207
⌈>	Sc	45			273046.500	ug/L	257105.381
|	Cr	50	-0.0776	206.30	345.170	ug/L	337.578
L	Cr	53	-0.3646	16.23	1283.737	ug/L	1370.746
⌈	Ni	61	-1.2903	58.06	1268.402	ug/L	1280.404
|	Cu	63	-0.0212	55.95	414.344	ug/L	447.012
|	Br	79			561.683	ug/L	946.374
L>	Ge	74			710693.630	ug/L	683518.200
⌈	Ag	109	0.0180	67.86	151.336	ug/L	100.335
L>	In	115			371327.349	ug/L	376694.043
⌈	Pb	206	-0.0362	16.97	66.667	ug/L	102.335
|	Pb	207	-0.0450	36.18	50.001	ug/L	86.334
L>	Bi	209			110552.234	ug/L	112592.207
	Hg	200			20.000	ug/L	23.667
	Pd	106			217.750	ug/L	215.238
	Kr	83			150.669	ug/L	142.335
	Ti	48			-1775.498	ug/L	-1732.006
	Ca	44			27079.246	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		106.200		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		104.270		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.575		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.273		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		106.200		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		103.976		
⌈	Ag	109				
⌊>	In	115		98.575		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.188		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX55

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:32:44
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX55.060
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 63
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10 x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79758.513	~~ug/L~~ ug/Kg	73248.534
⌜	Be	9	461.3098	18.11	37.000	ug/L	5.000
|	Al	27	8231611.9875	0.84	16335543.996	ug/L	4556.444
|>	Sc	45			301366.647	ug/L	257105.381
|	V	51	18226.7352	2.88	90147.343	ug/L	3124.747
|	Cr	52	21144.8540	4.20	105461.047	ug/L	13215.244
|	Mn	55	234831.0338	3.81	1626694.274	ug/L	2047.167
|	Fe	57	10603987.2385	3.11	1532160.139	ug/L	35415.788
|	Co	59	10376.3845	4.23	58420.189	ug/L	200.337
|	Ni	60	7762.9979	3.56	9583.749	ug/L	283.229
⌊	Cu	65	22887.1236	0.78	28545.467	ug/L	229.671
⌜>	Ge	72			530385.891	ug/L	486473.824
|	Zn	68	170916.2310	1.34	75318.126	ug/L	276.672
|	As	75	412366.1129	0.26	369636.932	ug/L	-82.212
⌊	Se	82	1486.1570	4.05	125.786	ug/L	1.429
	Y	89			533476.341	ug/L	335585.831
⌜	Mo	97	1505.4203	2.30	1625.109	ug/L	80.001
|	Ag	107	786.9017	1.50	2746.625	ug/L	92.668
|>	In	115			394405.764	ug/L	376694.043
|	Cd	111	6931.0120	1.69	5583.565	ug/L	14.507
|	Sn	117	760.4758	9.58	658.689	ug/L	110.002
|	Sb	121	1046.3302	1.52	3815.548	ug/L	1011.713
⌊	Ba	135	136872.8513	1.58	74490.144	ug/L	28.334
	Tb	159			245441.957	ug/L	235775.390
⌜>	Ho	165			222127.823	ug/L	211815.137
|	Tl	205	385.9811	3.39	1187.061	ug/L	57.667
|	Pb	208	233197.3523	0.91	876921.495	ug/L	383.339
⌊	U	238	2837.6319	1.68	8506.619	ug/L	34.000

	Bi	209			114923.939	ug/L	112592.207
⌈>	Sc	45			301366.647	ug/L	257105.381
|	Cr	50	109241.5869	11.77	20984.359	ug/L	337.578
L	Cr	53	20249.0763	2.13	12130.603	ug/L	1370.746
⌈	Ni	61	10457.2985	10.25	1923.816	ug/L	1280.404
|	Cu	63	24538.2961	2.54	61842.923	ug/L	447.012
|	Br	79			1894.812	ug/L	946.374
L>	Ge	74			743574.262	ug/L	683518.200
⌈	Ag	109	792.2590	1.84	2561.255	ug/L	100.335
L>	In	115			394405.764	ug/L	376694.043
⌈	Pb	206	243220.3784	1.28	235887.705	ug/L	102.335
|	Pb	207	237572.6387	2.09	190977.499	ug/L	86.334
L>	Bi	209			114923.939	ug/L	112592.207
	Hg	200			415.010	ug/L	23.667
	Pd	106			718.816	ug/L	215.238
	Kr	83			178.336	ug/L	142.335
	Ti	48			1329038.051	ug/L	-1732.006
	Ca	44			505919.047	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		117.215		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		109.027		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		104.702		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		104.869		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		117.215		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		108.786		
⌈	Ag	109				
⌊>	In	115		104.702		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		102.071		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX56

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:37:13
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX56.061
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 64
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2 5x
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			80260.015	~~ug/L~~ ug/kg	73248.534
⌈	Be	9	377.1090	16.86	57.334	ug/L	5.000
|	Al	27	6862204.3101	1.73	27419669.741	ug/L	4556.444
|>	Sc	45			303551.214	ug/L	257105.381
|	V	51	17568.3726	2.43	171595.699	ug/L	3124.747
|	Cr	52	27539.0953	0.99	251705.434	ug/L	13215.244
|	Mn	55	247248.3188	1.74	3448288.309	ug/L	2047.167
|	Fe	57	10878365.9835	1.29	3123574.942	ug/L	35415.788
|	Co	59	7716.5843	3.37	87446.057	ug/L	200.337
|	Ni	60	7692.7950	1.73	18805.790	ug/L	283.229
L	Cu	65	19936.7760	3.33	49865.514	ug/L	229.671
⌈>	Ge	72			543635.369	ug/L	486473.824
|	Zn	68	179344.1992	2.28	161639.261	ug/L	276.672
|	As	75	264850.5576	1.67	486597.245	ug/L	-82.212
L	Se	82	780.2148	19.53	135.552	ug/L	1.429
	Y	89			669832.558	ug/L	335585.831
⌈	Mo	97	1095.6129	3.62	2329.880	ug/L	80.001
|	Ag	107	915.0078	1.90	6268.105	ug/L	92.668
|>	In	115			394929.330	ug/L	376694.043
|	Cd	111	6799.3892	1.58	10956.657	ug/L	14.507
|	Sn	117	1272.4584	3.13	1935.817	ug/L	110.002
|	Sb	121	674.6891	1.44	4619.460	ug/L	1011.713
L	Ba	135	134323.9260	1.65	146342.914	ug/L	28.334
	Tb	159			252122.199	ug/L	235775.390
⌈>	Ho	165			225178.083	ug/L	211815.137
|	Tl	205	308.6241	3.61	1888.144	ug/L	57.667
|	Pb	208	215347.8226	1.38	1641393.897	ug/L	383.339
L	U	238	2186.7964	0.56	13268.959	ug/L	34.000

	Bi	209			118668.031	ug/L	112592.207
⌈>	Sc	45			303551.214	ug/L	257105.381
|	Cr	50	98421.4556	15.07	37833.700	ug/L	337.578
L	Cr	53	27086.3608	2.50	29977.068	ug/L	1370.746
⌈	Ni	61	11723.8653	7.26	2612.932	ug/L	1280.404
|	Cu	63	21648.5203	2.39	110004.062	ug/L	447.012
|	Br	79			3360.432	ug/L	946.374
⌊>	Ge	74			752313.503	ug/L	683518.200
⌈	Ag	109	934.4533	1.17	5906.947	ug/L	100.335
⌊>	In	115			394929.330	ug/L	376694.043
⌈	Pb	206	224052.0864	0.93	448636.845	ug/L	102.335
|	Pb	207	216219.5651	2.19	358833.635	ug/L	86.334
⌊>	Bi	209			118668.031	ug/L	112592.207
	Hg	200			744.360	ug/L	23.667
	Pd	106			1260.442	ug/L	215.238
	Kr	83			205.337	ug/L	142.335
	Ti	48			2473707.172	ug/L	-1732.006
	Ca	44			1013289.069	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		118.065		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		111.750		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		104.841		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		106.309		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		118.065		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		110.065		
⌈	Ag	109				
⌊>	In	115		104.841		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		105.396		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range — NR
As 75 Upper	As	75	As above linear range > 0.1C
Pb 208 Upper	Pb	208	Pb above linear range > 0.1C

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX57

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 13:41:43
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX57.062
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 65
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			79523.221	~~ug/L~~ ug/kg	73248.534
⌈	Be	9	440.3177	5.98	35.667	ug/L	5.000
|	Al	27	10316506.3288	0.55	20495415.442	ug/L	4556.444
|>	Sc	45			301748.417	ug/L	257105.381
|	V	51	24239.0316	4.54	118822.083	ug/L	3124.747
|	Cr	52	27427.9731	4.38	132368.056	ug/L	13215.244
|	Mn	55	263661.7015	3.36	1828588.825	ug/L	2047.167
|	Fe	57	12354173.2353	4.86	1780306.987	ug/L	35415.788
|	Co	59	27448.0274	3.05	154371.334	ug/L	200.337
|	Ni	60	8591.8042	3.49	10584.935	ug/L	283.229
⌊	Cu	65	16172.9488	1.44	20275.649	ug/L	229.671
⌈>	Ge	72			535091.292	ug/L	486473.824
|	Zn	68	121682.3218	1.82	54180.425	ug/L	276.672
|	As	75	492152.9042	1.89	445006.114	ug/L	-82.212
⌊	Se	82	1238.8274	27.18	105.829	ug/L	1.429
	Y	89			553348.329	ug/L	335585.831
⌈	Mo	97	1467.5755	1.42	1554.433	ug/L	80.001
|	Ag	107	631.4227	1.76	2178.188	ug/L	92.668
|>	In	115			386443.471	ug/L	376694.043
|	Cd	111	3232.2219	4.02	2559.480	ug/L	14.507
|	Sn	117	369.1949	2.83	371.342	ug/L	110.002
|	Sb	121	500.5293	7.92	2330.214	ug/L	1011.713
⌊	Ba	135	152419.0409	1.37	81275.397	ug/L	28.334
	Tb	159			246840.271	ug/L	235775.390
⌈>	Ho	165			224294.076	ug/L	211815.137
|	Tl	205	318.0989	3.45	999.045	ug/L	57.667
|	Pb	208	128491.6422	2.30	487990.142	ug/L	383.339
⌊	U	238	2444.7824	1.94	7403.325	ug/L	34.000

	Bi	209			114178.312	ug/L	112592.207
⌈>	Sc	45			301748.417	ug/L	257105.381
|	Cr	50	117874.4831	8.45	22644.920	ug/L	337.578
L	Cr	53	26612.5711	5.95	15454.187	ug/L	1370.746
⌈	Ni	61	11696.8695	4.10	1992.492	ug/L	1280.404
|	Cu	63	17429.4278	0.77	44195.705	ug/L	447.012
|	Br	79			2073.171	ug/L	946.374
L>	Ge	74			745788.071	ug/L	683518.200
⌈	Ag	109	634.8036	3.57	2031.498	ug/L	100.335
L>	In	115			386443.471	ug/L	376694.043
⌈	Pb	206	136243.4850	1.18	131312.403	ug/L	102.335
|	Pb	207	134301.0825	1.37	107287.792	ug/L	86.334
L>	Bi	209			114178.312	ug/L	112592.207
	Hg	200			1349.744	ug/L	23.667
	Pd	106			943.143	ug/L	215.238
	Kr	83			173.336	ug/L	142.335
	Ti	48			1362412.786	ug/L	-1732.006
	Ca	44			533134.601	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		117.364		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		109.994		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.588		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		105.891		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		117.364		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		109.110		
⌈	Ag	109				
⌊>	In	115		102.588		
⌈	Pb	206				
‖	Pb	207				
⌊>	Bi	209		101.409		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range – NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX5K

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:08:44
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX5K.068
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 71
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2
Diluted To Volume (mL): 1e+001 5x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77229.046	~~ug/L~~ ug/kg	73248.534
[	Be	9	434.6257	17.80	65.334	ug/L	5.000
|	Al	27	8995474.7451	2.26	36004640.174	ug/L	4556.444
|>	Sc	45			303995.714	ug/L	257105.381
|	V	51	18289.2373	0.35	178808.625	ug/L	3124.747
|	Cr	52	31737.9477	1.43	288154.975	ug/L	13215.244
|	Mn	55	282549.3706	3.89	3946755.801	ug/L	2047.167
|	Fe	57	12476758.4028	2.65	3580625.211	ug/L	35415.788
|	Co	59	8212.0569	2.22	93160.836	ug/L	200.337
|	Ni	60	8035.5772	4.40	19649.889	ug/L	283.229
L	Cu	65	18460.9446	3.06	46276.827	ug/L	229.671
[>	Ge	72			516827.992	ug/L	486473.824
|	Zn	68	147776.9862	1.34	126703.511	ug/L	276.672
|	As	75	337792.5398	0.67	590172.043	ug/L	-82.212
L	Se	82	892.7179	9.45	146.828	ug/L	1.429
	Y	89			720218.164	ug/L	335585.831
[	Mo	97	943.6658	2.89	1916.815	ug/L	80.001
|	Ag	107	1114.4564	2.68	7232.908	ug/L	92.668
|>	In	115			375070.567	ug/L	376694.043
|	Cd	111	6337.8693	0.38	9699.228	ug/L	14.507
|	Sn	117	928.0647	3.65	1369.746	ug/L	110.002
|	Sb	121	390.8664	4.37	2965.004	ug/L	1011.713
L	Ba	135	136844.5310	1.85	141596.993	ug/L	28.334
	Tb	159			238970.795	ug/L	235775.390
[>	Ho	165			216119.636	ug/L	211815.137
|	Tl	205	350.4740	1.41	2049.501	ug/L	57.667
|	Pb	208	162757.6439	2.88	1190035.490	ug/L	383.339
L	U	238	2986.5964	2.66	17370.396	ug/L	34.000

	Bi	209			112530.445	ug/L	112592.207
⌈>	Sc	45			303995.714	ug/L	257105.381
|	Cr	50	103807.4161	4.10	39903.393	ug/L	337.578
L	Cr	53	31221.3682	2.00	34363.655	ug/L	1370.746
⌈	Ni	61	12994.8809	5.42	2618.600	ug/L	1280.404
|	Cu	63	21005.0055	1.98	101827.112	ug/L	447.012
|	Br	79			2885.321	ug/L	946.374
L>	Ge	74			717654.715	ug/L	683518.200
⌈	Ag	109	1112.1146	1.49	6655.284	ug/L	100.335
L>	In	115			375070.567	ug/L	376694.043
⌈	Pb	206	169734.0266	1.93	322247.409	ug/L	102.335
|	Pb	207	166253.7090	2.40	261614.642	ug/L	86.334
L>	Bi	209			112530.445	ug/L	112592.207
	Hg	200			1264.735	ug/L	23.667
	Pd	106			1538.346	ug/L	215.238
	Kr	83			212.004	ug/L	142.335
	Ti	48			2902643.455	ug/L	-1732.006
	Ca	44			940031.530	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		118.238		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		106.240		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.569		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		102.032		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		118.238		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		104.994		
⌈	Ag	109				
⌊>	In	115		99.569		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		99.945		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range – NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 14:13:30
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.069
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			73670.224	ug/L	73248.534
⌜	Be	9	98.8617	2.34	5902.278	ug/L	5.000
|	Al	27	101.7219	1.09	182770.360	ug/L	4556.444
|>	Sc	45			265966.793	ug/L	257105.381
|	V	51	106.2536	2.97	448479.911	ug/L	3124.747
|	Cr	52	105.5756	3.58	410392.870	ug/L	13215.244
|	Mn	55	102.1976	1.99	626253.834	ug/L	2047.167
|	Fe	57	5046.7484	0.60	662881.044	ug/L	35415.788
|	Co	59	99.7764	0.81	494206.683	ug/L	200.337
|	Ni	60	99.5314	3.76	105007.947	ug/L	283.229
⌊	Cu	65	100.2611	3.07	109525.574	ug/L	229.671
⌜>	Ge	72			494736.501	ug/L	486473.824
|	Zn	68	98.9108	0.73	40781.220	ug/L	276.672
|	As	75	102.3436	2.38	85488.209	ug/L	-82.212
⌊	Se	82	105.2405	0.70	8207.911	ug/L	1.429
	Y	89			346621.044	ug/L	335585.831
⌜	Mo	97	101.7624	1.34	96235.760	ug/L	80.001
|	Ag	107	102.5493	0.85	318763.413	ug/L	92.668
|>	In	115			364074.754	ug/L	376694.043
|	Cd	111	101.0090	1.02	74916.333	ug/L	14.507
|	Sn	117	102.1760	1.90	67483.044	ug/L	110.002
|	Sb	121	100.6813	0.87	245770.309	ug/L	1011.713
⌊	Ba	135	100.8719	0.99	50673.250	ug/L	28.334
	Tb	159			226652.290	ug/L	235775.390
⌜>	Ho	165			203756.677	ug/L	211815.137
|	Tl	205	101.3362	1.23	271433.558	ug/L	57.667
|	Pb	208	100.5022	1.72	346784.472	ug/L	383.339
⌊	U	238	102.2106	2.82	279751.846	ug/L	34.000

	Bi	209			107837.930	ug/L	112592.207
⌈>	Sc	45			265966.793	ug/L	257105.381
⌈	Cr	50	104.2187	3.40	17703.469	ug/L	337.578
⌊	Cr	53	103.4606	2.33	48882.711	ug/L	1370.746
⌈	Ni	61	96.9744	7.42	5912.952	ug/L	1280.404
⌊	Cu	63	99.6472	2.13	233728.733	ug/L	447.012
⌈	Br	79			826.699	ug/L	946.374
⌊>	Ge	74			696134.140	ug/L	683518.200
⌈	Ag	109	101.7418	0.65	291215.434	ug/L	100.335
⌊>	In	115			364074.754	ug/L	376694.043
⌈	Pb	206	102.4033	0.86	93245.956	ug/L	102.335
⌊	Pb	207	101.3418	1.57	76488.704	ug/L	86.334
⌊>	Bi	209			107837.930	ug/L	112592.207
	Hg	200			20.667	ug/L	23.667
	Pd	106			501.735	ug/L	215.238
	Kr	83			147.336	ug/L	142.335
	Ti	48			-1060.752	ug/L	-1732.006
	Ca	44			27153.387	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	98.862			
|	Al	27	101.722			
|>	Sc	45		103.447		
|	V	51	106.254			
|	Cr	52	105.576			
|	Mn	55	102.198			
|	Fe	57	100.935			
|	Co	59	99.776			
|	Ni	60	99.531			
L	Cu	65	100.261			
⌈>	Ge	72		101.698		
|	Zn	68	98.911			
|	As	75	102.344			
L	Se	82	105.240			
	Y	89				
⌈	Mo	97	101.762			
|	Ag	107	102.549			
|>	In	115		96.650		
|	Cd	111	101.009			
|	Sn	117	102.176			
|	Sb	121	100.681			
L	Ba	135	100.872			
	Tb	159				
⌈>	Ho	165		96.196		
|	Tl	205	101.336			
|	Pb	208	100.502			
L	U	238	102.211			
	Bi	209				
⌈>	Sc	45		103.447		
|	Cr	50				
L	Cr	53				
⌈	Ni	61				
|	Cu	63				
L	Br	79				
L>	Ge	74		101.846		
⌈	Ag	109				
L>	In	115		96.650		
⌈	Pb	206				
|	Pb	207				
L>	Bi	209		95.777		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 5

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 14:18:14
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 5.070
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75393.183	ug/L	73248.534
⌜	Be	9	0.0348	101.10	7.333	ug/L	5.000
|	Al	27	-0.5713	17.81	3764.868	ug/L	4556.444
|>	Sc	45			269500.997	ug/L	257105.381
|	V	51	0.0577	53.16	3521.778	ug/L	3124.747
|	Cr	52	0.0461	16.58	14028.360	ug/L	13215.244
|	Mn	55	-0.0095	18.48	2086.840	ug/L	2047.167
|	Fe	57	-4.9471	133.90	36511.738	ug/L	35415.788
|	Co	59	0.0058	72.58	239.004	ug/L	200.337
|	Ni	60	-0.0238	27.98	271.403	ug/L	283.229
⌞	Cu	65	-0.0224	97.73	216.038	ug/L	229.671
⌜>	Ge	72			496030.928	ug/L	486473.824
|	Zn	68	-0.2573	16.49	176.670	ug/L	276.672
|	As	75	-0.1063	46.32	-173.176	ug/L	-82.212
⌞	Se	82	0.0820	331.67	8.078	ug/L	1.429
	Y	89			344986.021	ug/L	335585.831
⌜	Mo	97	0.0675	36.96	142.002	ug/L	80.001
|	Ag	107	0.0242	35.05	165.669	ug/L	92.668
|>	In	115			366651.652	ug/L	376694.043
|	Cd	111	0.0155	9.05	25.716	ug/L	14.507
|	Sn	117	0.1703	29.05	220.004	ug/L	110.002
|	Sb	121	0.7392	35.21	2791.643	ug/L	1011.713
⌞	Ba	135	0.0087	154.32	32.000	ug/L	28.334
	Tb	159			229326.285	ug/L	235775.390
⌜>	Ho	165			206391.323	ug/L	211815.137
|	Tl	205	0.0064	54.66	73.334	ug/L	57.667
|	Pb	208	-0.0264	50.75	282.337	ug/L	383.339
⌞	U	238	0.0203	33.13	89.001	ug/L	34.000

	Bi	209			108874.474	ug/L	112592.207
⌈>	Sc	45			269500.997	ug/L	257105.381
|	Cr	50	0.1332	151.44	376.533	ug/L	337.578
L	Cr	53	-0.4185	24.13	1241.733	ug/L	1370.746
⌈	Ni	61	-1.3847	47.72	1250.067	ug/L	1280.404
|	Cu	63	-0.0172	22.42	419.010	ug/L	447.012
|	Br	79			603.019	ug/L	946.374
L>	Ge	74			702711.071	ug/L	683518.200
⌈	Ag	109	0.0202	75.43	155.669	ug/L	100.335
L>	In	115			366651.652	ug/L	376694.043
⌈	Pb	206	-0.0194	111.05	81.334	ug/L	102.335
|	Pb	207	-0.0192	91.58	69.001	ug/L	86.334
L>	Bi	209			108874.474	ug/L	112592.207
	Hg	200			12.000	ug/L	23.667
	Pd	106			216.131	ug/L	215.238
	Kr	83			144.336	ug/L	142.335
	Ti	48			-1627.238	ug/L	-1732.006
	Ca	44			26507.503	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		104.821		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		101.965		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		97.334		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		97.439		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		104.821		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		102.808		
⌈	Ag	109				
⌊>	In	115		97.334		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		96.698		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58

Sample Description: D9A130168 Soils
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:23:38
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58.071
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 73
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10X

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78859.040	~~ug/L~~ ug/Kg	73248.534
⌜	Be	9	460.7285	8.23	36.334	ug/L	5.000
|	Al	27	8016054.7255	1.88	15585340.887	ug/L	4556.444
|>	Sc	45			295282.608	ug/L	257105.381
|	V	51	18863.3817	2.41	91324.969	ug/L	3124.747
|	Cr	52	17849.3330	2.53	89624.699	ug/L	13215.244
|	Mn	55	269722.2452	1.85	1830398.470	ug/L	2047.167
|	Fe	57	10804496.4372	2.20	1528423.144	ug/L	35415.788
|	Co	59	9438.4080	2.74	52088.427	ug/L	200.337
|	Ni	60	7408.5899	0.47	8977.926	ug/L	283.229
L	Cu	65	18393.9921	3.29	22509.717	ug/L	229.671
⌜>	Ge	72			519031.542	ug/L	486473.824
|	Zn	68	152281.2207	0.62	65703.121	ug/L	276.672
|	As	75	189817.8689	0.29	166464.827	ug/L	-82.212
L	Se	82	687.5523	57.36	58.271	ug/L	1.429
	Y	89			530799.387	ug/L	335585.831
⌜	Mo	97	1044.0211	2.65	1127.389	ug/L	80.001
|	Ag	107	851.2215	1.69	2897.657	ug/L	92.668
|>	In	115			385592.303	ug/L	376694.043
|	Cd	111	6519.9935	2.12	5136.055	ug/L	14.507
|	Sn	117	822.5215	0.78	687.357	ug/L	110.002
|	Sb	121	404.0755	2.17	2075.838	ug/L	1011.713
L	Ba	135	137488.8283	1.97	73165.842	ug/L	28.334
	Tb	159			241110.325	ug/L	235775.390
⌜>	Ho	165			215836.506	ug/L	211815.137
|	Tl	205	329.9515	7.79	993.044	ug/L	57.667
|	Pb	208	164274.8571	1.11	600195.004	ug/L	383.339
L	U	238	2471.2095	2.13	7205.226	ug/L	34.000

	Bi	209			111590.115	ug/L	112592.207
⌈>	Sc	45			295282.608	ug/L	257105.381
|	Cr	50	120479.5110	9.40	22587.393	ug/L	337.578
L	Cr	53	17112.0492	2.13	10291.483	ug/L	1370.746
⌈	Ni	61	10627.5027	5.69	1862.140	ug/L	1280.404
|	Cu	63	20395.6524	0.66	49604.164	ug/L	447.012
|	Br	79			1408.750	ug/L	946.374
L>	Ge	74			716475.631	ug/L	683518.200
⌈	Ag	109	902.8030	2.53	2839.644	ug/L	100.335
L>	In	115			385592.303	ug/L	376694.043
⌈	Pb	206	171986.5091	0.58	161984.169	ug/L	102.335
|	Pb	207	167933.2166	1.13	131107.543	ug/L	86.334
L>	Bi	209			111590.115	ug/L	112592.207
	Hg	200			202.003	ug/L	23.667
	Pd	106			683.608	ug/L	215.238
	Kr	83			199.003	ug/L	142.335
	Ti	48			1367315.884	ug/L	-1732.006
	Ca	44			386886.667	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		114.849		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		106.693		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
⌊>	In	115		102.362		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		101.899		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		114.849		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		104.822		
⌈	Ag	109				
⌊>	In	115		102.362		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		99.110		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Fe 57 Upper	Fe	57	Fe over linear range — NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58 L

Sample Description: Serial Dilution 5x
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:28:03
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58 L.072
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 74
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 0.2
Diluted To Volume (mL): 1e+001 50x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75878.079	~~ug/L~~ ug/kg	73248.534
[	Be	9	545.2541	80.09	12.000	ug/L	5.000
|	Al	27	8597701.1084	0.86	3128278.573	ug/L	4556.444
|>	Sc	45			275995.537	ug/L	257105.381
|	V	51	20232.1675	4.32	20937.170	ug/L	3124.747
|	Cr	52	18937.1158	6.22	28946.285	ug/L	13215.244
|	Mn	55	294156.4751	2.05	374845.619	ug/L	2047.167
|	Fe	57	11737548.2691	5.28	340006.558	ug/L	35415.788
|	Co	59	10084.0387	3.90	10567.346	ug/L	200.337
|	Ni	60	7918.1852	5.65	2030.809	ug/L	283.229
L	Cu	65	19823.6195	3.10	4729.718	ug/L	229.671
[>	Ge	72			507543.765	ug/L	486473.824
|	Zn	68	153621.9699	0.83	13194.557	ug/L	276.672
|	As	75	195156.0415	1.70	33398.799	ug/L	-82.212
L	Se	82	1685.1904	66.16	28.366	ug/L	1.429
	Y	89			389135.174	ug/L	335585.831
[	Mo	97	935.9576	9.47	265.672	ug/L	80.001
|	Ag	107	757.6363	3.46	585.685	ug/L	92.668
|>	In	115			380411.045	ug/L	376694.043
|	Cd	111	6815.9597	5.21	1070.520	ug/L	14.507
|	Sn	117	559.2459	27.21	188.003	ug/L	110.002
|	Sb	121	-817.2113	2.40	606.352	ug/L	1011.713
L	Ba	135	139113.6142	1.45	14625.296	ug/L	28.334
	Tb	159			234355.704	ug/L	235775.390
[>	Ho	165			209836.003	ug/L	211815.137
|	Tl	205	282.0468	10.79	212.670	ug/L	57.667
|	Pb	208	170147.9585	0.91	121192.085	ug/L	383.339
L	U	238	2495.9506	2.53	1440.754	ug/L	34.000

Sample read < 100x RL except Pb + Mn

	Bi	209			109161.945	ug/L	112592.207
⌈>	Sc	45			275995.537	ug/L	257105.381
|	Cr	50	123149.8939	6.32	4613.394	ug/L	337.578
L	Cr	53	16576.1158	3.43	3049.023	ug/L	1370.746
⌈	Ni	61	4388.8635	144.26	1392.749	ug/L	1280.404
|	Cu	63	20253.6762	2.96	10284.471	ug/L	447.012
|	Br	79			745.360	ug/L	946.374
L>	Ge	74			720547.137	ug/L	683518.200
⌈	Ag	109	784.6431	11.08	571.017	ug/L	100.335
L>	In	115			380411.045	ug/L	376694.043
⌈	Pb	206	177726.6686	2.32	32825.673	ug/L	102.335
|	Pb	207	174088.9539	1.94	26652.774	ug/L	86.334
L>	Bi	209			109161.945	ug/L	112592.207
	Hg	200			58.001	ug/L	23.667
	Pd	106			289.081	ug/L	215.238
	Kr	83			149.669	ug/L	142.335
	Ti	48			274206.095	ug/L	-1732.006
	Ca	44			96738.520	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		107.347		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		104.331		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		100.987		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.066		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		107.347		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		105.417		
⌈	Ag	109				
⌊>	In	115		100.987		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		96.953		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - pR

Fe 57 Upper	Fe	57	Fe over linear range
As 75 Upper	As	75	As above linear range
Sb 121 Lower	Sb	121	- NR
Pb 208 Upper	Pb	208	Pb above linear range

OK

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58 PDS

Sample Description: Post Digestion Spike
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:32:28
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58 PDS.073
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 75
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			78184.822	~~ug/L~~ ug/Kg	73248.534
⌜	Be	9	185979.9715	2.33	12331.113	ug/L	5.000
|	Al	27	8278687.5968	2.53	16102704.071	ug/L	4556.444
|>	Sc	45			295362.170	ug/L	257105.381
|	V	51	211059.0176	2.09	985256.965	ug/L	3124.747
|	Cr	52	209589.9084	1.49	889448.660	ug/L	13215.244
|	Mn	55	488593.2949	0.58	3315696.257	ug/L	2047.167
|	Fe	57	10589470.1412	1.25	1499970.616	ug/L	35415.788
|	Co	59	191284.9925	0.95	1051875.834	ug/L	200.337
|	Ni	60	188838.4787	1.43	220947.677	ug/L	283.229
⌊	Cu	65	198568.5273	2.03	240742.889	ug/L	229.671
⌜>	Ge	72			518499.542	ug/L	486473.824
|	Zn	68	344219.5792	0.61	147991.901	ug/L	276.672
|	As	75	390242.6340	1.31	341949.908	ug/L	-82.212
⌊	Se	82	203315.2053	2.88	16622.075	ug/L	1.429
	Y	89			540172.410	ug/L	335585.831
⌜	Mo	97	196980.3836	2.38	193105.471	ug/L	80.001
|	Ag	107	193760.0672	1.78	624399.737	ug/L	92.668
|>	In	115			377454.555	ug/L	376694.043
|	Cd	111	199422.1111	1.74	153324.919	ug/L	14.507
|	Sn	117	853.1055	6.41	693.690	ug/L	110.002
|	Sb	121	194294.6218	0.90	490875.217	ug/L	1011.713
⌊	Ba	135	330892.1572	2.57	172279.502	ug/L	28.334
	Tb	159			238498.087	ug/L	235775.390
⌜>	Ho	165			213127.219	ug/L	211815.137
|	Tl	205	192457.5413	1.57	539194.479	ug/L	57.667
|	Pb	208	353552.5776	2.54	1275246.805	ug/L	383.339
⌊	U	238	200558.3787	2.84	574297.951	ug/L	34.000

Spike level = 200,000 µg/Kg

	Bi	209			111342.367	ug/L	112592.207
⌈>	Sc	45			295362.170	ug/L	257105.381
|	Cr	50	294713.9148	2.67	54864.556	ug/L	337.578
L	Cr	53	208556.6287	1.72	107816.447	ug/L	1370.746
⌈	Ni	61	198628.1103	1.85	11301.583	ug/L	1280.404
|	Cu	63	212862.7292	0.48	524731.144	ug/L	447.012
|	Br	79			1430.086	ug/L	946.374
L>	Ge	74			732391.919	ug/L	683518.200
⌈	Ag	109	194915.0151	1.21	578372.505	ug/L	100.335
L>	In	115			377454.555	ug/L	376694.043
⌈	Pb	206	364572.4362	1.21	342527.400	ug/L	102.335
|	Pb	207	359761.5653	1.26	280154.990	ug/L	86.334
L>	Bi	209			111342.367	ug/L	112592.207
	Hg	200			193.003	ug/L	23.667
	Pd	106			989.638	ug/L	215.238
	Kr	83			191.003	ug/L	142.335
	Ti	48			1373897.043	ug/L	-1732.006
	Ca	44			388291.171	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		114.880		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		106.583		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		100.202		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		100.619		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		114.880		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.150		
⌈	Ag	109				
⌊>	In	115		100.202		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.890		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range -NR

V 51 Upper	V	51	V above linear range
Cr 52 Upper	Cr	52	
Fe 57 Upper	Fe	57	Fe over linear range
Co 59 Upper	Co	59	Co above linear range
Ni 60 Upper	Ni	60	Ni above linear range
Cu 65 Upper	Cu	65	Cu above linear range
Zn 68 Upper	Zn	68	Zn above linear range
As 75 Upper	As	75	As above linear range
Se 82 Upper	Se	82	Se above linear range
Ag 107 Upper	Ag	107	Ag above linear range
Cd 111 Upper	Cd	111	Cd above linear range
Ba 135 Upper	Ba	135	Ba above linear range
Pb 208 Upper	Pb	208	Pb above linear range
U 238 Upper	U	238	U above linear range

NR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58S

Sample Description: Matrix Spike
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:36:53
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58S.074
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 76
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10 x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			76459.504	~~ug/L~~ µg/Kg	73248.534
⌜	Be	9	18502.5000	3.07	1227.732	ug/L	5.000
|	Al	27	8347471.5385	2.60	16181497.556	ug/L	4556.444
|>	Sc	45			294465.929	ug/L	257105.381
|	V	51	38990.4327	2.04	184397.594	ug/L	3124.747
|	Cr	52	38112.2133	1.01	173650.043	ug/L	13215.244
|	Mn	55	285112.1504	1.64	1930050.865	ug/L	2047.167
|	Fe	57	10966279.3496	1.26	1547107.073	ug/L	35415.788
|	Co	59	28246.9797	0.52	155050.143	ug/L	200.337
|	Ni	60	25922.0593	0.73	30515.880	ug/L	283.229
⌊	Cu	65	37036.9284	1.35	44970.402	ug/L	229.671
⌜>	Ge	72			526902.285	ug/L	486473.824
|	Zn	68	168792.0756	0.58	73905.450	ug/L	276.672
|	As	75	209243.4621	0.44	186289.471	ug/L	-82.212
⌊	Se	82	19719.2953	1.03	1639.101	ug/L	1.429
	Y	89			535630.530	ug/L	335585.831
⌜	Mo	97	18094.0881	2.58	17664.097	ug/L	80.001
|	Ag	107	21193.6555	0.88	67810.904	ug/L	92.668
|>	In	115			374309.159	ug/L	376694.043
|	Cd	111	26296.9424	1.17	20064.673	ug/L	14.507
|	Sn	117	858.2766	6.42	691.357	ug/L	110.002
|	Sb	121	4802.1524	16.45	13019.826	ug/L	1011.713
⌊	Ba	135	158615.9956	1.33	81917.017	ug/L	28.334
	Tb	159			236393.005	ug/L	235775.390
⌜>	Ho	165			213094.076	ug/L	211815.137
|	Tl	205	19402.1468	1.15	54402.267	ug/L	57.667
|	Pb	208	181529.9668	0.71	654924.464	ug/L	383.339
⌊	U	238	22426.4299	2.68	64242.821	ug/L	34.000

Spike level = 20,000 µg/Kg

	Bi	209			109793.859	ug/L	112592.207
⌈>	Sc	45			294465.929	ug/L	257105.381
|	Cr	50	140698.1814	5.11	26322.847	ug/L	337.578
L	Cr	53	36946.9027	0.89	20336.005	ug/L	1370.746
⌈	Ni	61	29162.0739	6.40	2841.311	ug/L	1280.404
|	Cu	63	38760.2744	1.54	96351.534	ug/L	447.012
|	Br	79			1410.417	ug/L	946.374
L>	Ge	74			735642.217	ug/L	683518.200
⌈	Ag	109	21430.3174	0.60	63151.917	ug/L	100.335
L>	In	115			374309.159	ug/L	376694.043
⌈	Pb	206	190782.3712	1.25	176758.295	ug/L	102.335
|	Pb	207	185757.4378	0.84	142659.975	ug/L	86.334
L>	Bi	209			109793.859	ug/L	112592.207
	Hg	200			220.004	ug/L	23.667
	Pd	106			708.391	ug/L	215.238
	Kr	83			195.337	ug/L	142.335
	Ti	48			1388464.268	ug/L	-1732.006
	Ca	44			384952.662	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		114.531		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		108.311		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.367		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		100.604		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		114.531		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.626		
⌈	Ag	109				
⌊>	In	115		99.367		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		97.515		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - OR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range > OK
U 238 Upper	U	238	U above linear range - NR

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPX58X

Sample Description: Sample Duplicate
Batch ID: 9014239
Sample Date/Time: Tuesday, February 02, 1999 14:41:19
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\CPX58X.075
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 77
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001 10x

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			77091.703	~~ug/L~~ ug/kg	73248.534
⌜	Be	9	455.4728	19.45	36.000	ug/L	5.000
|	Al	27	7705029.3210	3.11	14999630.364	ug/L	4556.444
|>	Sc	45			295639.711	ug/L	257105.381
|	V	51	17987.4412	3.43	87328.297	ug/L	3124.747
|	Cr	52	16969.0232	1.91	86048.960	ug/L	13215.244
|	Mn	55	259696.9013	2.17	1765333.443	ug/L	2047.167
|	Fe	57	10426159.8812	1.58	1479081.582	ug/L	35415.788
|	Co	59	9061.6542	0.13	50097.196	ug/L	200.337
|	Ni	60	7181.3247	2.78	8723.621	ug/L	283.229
⌞	Cu	65	18109.5001	1.91	22215.873	ug/L	229.671
⌜>	Ge	72			526836.808	ug/L	486473.824
|	Zn	68	145342.6959	0.69	63672.594	ug/L	276.672
|	As	75	185925.6421	2.24	165461.138	ug/L	-82.212
⌞	Se	82	498.3566	65.74	43.068	ug/L	1.429
	Y	89			528139.566	ug/L	335585.831
⌜	Mo	97	1004.0026	1.47	1062.717	ug/L	80.001
|	Ag	107	856.7594	5.04	2848.313	ug/L	92.668
|>	In	115			377002.663	ug/L	376694.043
|	Cd	111	6302.7223	3.59	4852.081	ug/L	14.507
|	Sn	117	773.4118	3.09	638.354	ug/L	110.002
|	Sb	121	528.7131	8.93	2345.550	ug/L	1011.713
⌞	Ba	135	133989.7762	0.87	69698.670	ug/L	28.334
	Tb	159			235521.568	ug/L	235775.390
⌜>	Ho	165			211805.536	ug/L	211815.137
|	Tl	205	311.0927	8.36	923.706	ug/L	57.667
|	Pb	208	160165.4966	2.47	574343.162	ug/L	383.339
⌞	U	238	2464.6301	4.99	7047.478	ug/L	34.000

	Bi	209			110464.974	ug/L	112592.207
⌈>	Sc	45			295639.711	ug/L	257105.381
|	Cr	50	104917.8230	6.26	19810.157	ug/L	337.578
L	Cr	53	16571.1850	1.59	10026.285	ug/L	1370.746
⌈	Ni	61	8113.7322	11.06	1778.462	ug/L	1280.404
|	Cu	63	19256.5500	2.60	47921.402	ug/L	447.012
|	Br	79			1448.088	ug/L	946.374
L>	Ge	74			733140.289	ug/L	683518.200
⌈	Ag	109	885.2483	1.21	2723.287	ug/L	100.335
L>	In	115			377002.663	ug/L	376694.043
⌈	Pb	206	167499.0817	1.03	156165.976	ug/L	102.335
|	Pb	207	162643.7665	0.89	125685.789	ug/L	86.334
L>	Bi	209			110464.974	ug/L	112592.207
	Hg	200			198.337	ug/L	23.667
	Pd	106			735.021	ug/L	215.238
	Kr	83			184.003	ug/L	142.335
	Ti	48			1324880.027	ug/L	-1732.006
	Ca	44			377227.819	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		114.988		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		108.297		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		100.082		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.995		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		114.988		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		107.260		
⌈	Ag	109				
⌊>	In	115		100.082		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.111		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Fe 57 Upper	Fe	57	Fe over linear range - NR
As 75 Upper	As	75	As above linear range > OK
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 14:46:03
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 3.076
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			75930.114	ug/L	73248.534
⌜	Be	9	97.0717	3.99	6018.663	ug/L	5.000
|	Al	27	100.0876	4.70	186799.510	ug/L	4556.444
|>	Sc	45			276081.668	ug/L	257105.381
|	V	51	104.6882	2.97	458493.138	ug/L	3124.747
|	Cr	52	104.1219	2.69	420157.944	ug/L	13215.244
|	Mn	55	102.3829	4.19	651081.665	ug/L	2047.167
|	Fe	57	5002.7926	3.17	682409.924	ug/L	35415.788
|	Co	59	99.3244	3.31	510594.591	ug/L	200.337
|	Ni	60	98.8688	2.72	108264.555	ug/L	283.229
⌞	Cu	65	98.7237	2.03	111992.394	ug/L	229.671
⌜>	Ge	72			522283.709	ug/L	486473.824
|	Zn	68	97.3752	1.44	42387.240	ug/L	276.672
|	As	75	99.7857	0.90	88014.214	ug/L	-82.212
⌞	Se	82	102.6701	2.62	8452.343	ug/L	1.429
	Y	89			352830.622	ug/L	335585.831
⌜	Mo	97	101.2261	2.45	99244.912	ug/L	80.001
|	Ag	107	99.7076	3.22	321210.676	ug/L	92.668
|>	In	115			377577.983	ug/L	376694.043
|	Cd	111	99.6706	1.87	76633.393	ug/L	14.507
|	Sn	117	100.8342	1.81	69064.961	ug/L	110.002
|	Sb	121	98.1143	2.02	248327.706	ug/L	1011.713
⌞	Ba	135	98.5254	1.17	51326.264	ug/L	28.334
	Tb	159			230539.558	ug/L	235775.390
⌜>	Ho	165			208551.398	ug/L	211815.137
|	Tl	205	99.6283	1.80	273142.710	ug/L	57.667
|	Pb	208	98.8762	1.42	349225.342	ug/L	383.339
⌞	U	238	101.4251	2.34	284223.495	ug/L	34.000

	Bi	209			109208.811	ug/L	112592.207
⌈>	Sc	45			276081.668	ug/L	257105.381
⌈	Cr	50	101.8554	4.71	17960.319	ug/L	337.578
⌊	Cr	53	103.7276	2.14	50864.254	ug/L	1370.746
⌈	Ni	61	94.6447	4.96	6060.013	ug/L	1280.404
⌊	Cu	63	99.1412	2.90	242970.119	ug/L	447.012
⌈	Br	79			590.018	ug/L	946.374
⌊>	Ge	74			727488.650	ug/L	683518.200
⌈	Ag	109	100.4166	1.88	297990.532	ug/L	100.335
⌊>	In	115			377577.983	ug/L	376694.043
⌈	Pb	206	101.5186	1.59	93597.629	ug/L	102.335
⌊	Pb	207	100.1643	0.45	76556.764	ug/L	86.334
⌊>	Bi	209			109208.811	ug/L	112592.207
	Hg	200			17.000	ug/L	23.667
	Pd	106			234.078	ug/L	215.238
	Kr	83			153.336	ug/L	142.335
	Ti	48			-1247.720	ug/L	-1732.006
	Ca	44			26896.231	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	97.072			
|	Al	27	100.088			
|>	Sc	45		107.381		
|	V	51	104.688			
|	Cr	52	104.122			
|	Mn	55	102.383			
|	Fe	57	100.056			
|	Co	59	99.324			
|	Ni	60	98.869			
⌊	Cu	65	98.724			
⌈>	Ge	72		107.361		
|	Zn	68	97.375			
|	As	75	99.786			
⌊	Se	82	102.670			
	Y	89				
⌈	Mo	97	101.226			
|	Ag	107	99.708			
|>	In	115		100.235		
|	Cd	111	99.671			
|	Sn	117	100.834			
|	Sb	121	98.114			
⌊	Ba	135	98.525			
	Tb	159				
⌈>	Ho	165		98.459		
|	Tl	205	99.628			
|	Pb	208	98.876			
⌊	U	238	101.425			
	Bi	209				
⌈>	Sc	45		107.381		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		106.433		
⌈	Ag	109				
⌊>	In	115		100.235		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		96.995		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 5

Sample Description:
Batch ID:
Sample Date/Time: Tuesday, February 02, 1999 14:50:46
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: c:\elandata\dataset\020299\QC Std 5.077
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 1
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			74904.968	ug/L	73248.534
⌜	Be	9	-0.0100	109.31	4.667	ug/L	5.000
|	Al	27	-1.0329	7.03	2967.005	ug/L	4556.444
|>	Sc	45			271665.352	ug/L	257105.381
|	V	51	0.0885	60.49	3676.929	ug/L	3124.747
|	Cr	52	0.0284	315.62	14067.731	ug/L	13215.244
|	Mn	55	-0.0104	85.90	2097.508	ug/L	2047.167
|	Fe	57	-14.1280	44.37	35623.990	ug/L	35415.788
|	Co	59	0.0049	0.71	236.671	ug/L	200.337
|	Ni	60	-0.0249	100.79	272.062	ug/L	283.229
⌊	Cu	65	-0.0319	73.12	206.756	ug/L	229.671
⌈>	Ge	72			501687.711	ug/L	486473.824
|	Zn	68	-0.3209	34.29	152.002	ug/L	276.672
|	As	75	-0.0769	132.48	-149.958	ug/L	-82.212
⌊	Se	82	0.1094	105.51	10.078	ug/L	1.429
	Y	89			346765.859	ug/L	335585.831
⌈	Mo	97	0.0584	56.72	133.335	ug/L	80.001
|	Ag	107	0.0306	39.52	186.003	ug/L	92.668
|>	In	115			366324.865	ug/L	376694.043
|	Cd	111	0.0049	24.87	17.734	ug/L	14.507
|	Sn	117	0.1435	38.34	202.337	ug/L	110.002
|	Sb	121	0.8126	36.49	2974.352	ug/L	1011.713
⌊	Ba	135	0.0049	164.37	30.000	ug/L	28.334
	Tb	159			228650.484	ug/L	235775.390
⌈>	Ho	165			204192.203	ug/L	211815.137
|	Tl	205	0.0086	59.23	78.668	ug/L	57.667
|	Pb	208	-0.0433	26.35	220.003	ug/L	383.339
⌊	U	238	0.0244	42.98	99.335	ug/L	34.000

	Bi	209			107396.251	ug/L	112592.207
[>	Sc	45			271665.352	ug/L	257105.381
[	Cr	50	0.0529	252.51	365.337	ug/L	337.578
[	Cr	53	-0.5263	13.88	1201.396	ug/L	1370.746
[	Ni	61	-1.0944	88.27	1272.403	ug/L	1280.404
[	Cu	63	-0.0307	42.11	389.676	ug/L	447.012
[	Br	79			478.679	ug/L	946.374
[>	Ge	74			707270.881	ug/L	683518.200
[	Ag	109	0.0288	52.78	180.670	ug/L	100.335
[>	In	115			366324.865	ug/L	376694.043
[	Pb	206	-0.0448	34.69	57.001	ug/L	102.335
[	Pb	207	-0.0493	12.70	45.334	ug/L	86.334
[>	Bi	209			107396.251	ug/L	112592.207
	Hg	200			14.000	ug/L	23.667
	Pd	106			226.913	ug/L	215.238
	Kr	83			144.336	ug/L	142.335
	Ti	48			-1758.649	ug/L	-1732.006
	Ca	44			26526.873	ug/L	28609.572

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		105.663		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		103.127		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		97.247		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		96.401		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		105.663		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		103.475		
	Ag	109				
>	In	115		97.247		
	Pb	206				
	Pb	207				
>	Bi	209		95.385		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra Incorporated
4955 Yarrow Street
Arvada, Colorado 80002

303 421-6611 Telephone
303 431-7171 Fax

ANALYTICAL REPORT

Vasquez & I-70

Lot #: D9A130190

Gerald Almquist

Roy F. Weston, Inc.

QUANTERRA INCORPORATED

Ellen La Riviere
Project Manager

February 12, 1999

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	Supporting Documentation *[Please Note: A one-page "Description of Supporting Documentation" is provided in the Supporting Documentation section(s).]*	
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C.	• Semivolatile GC/MS	
D.	• Volatile GC	
E.	• Semivolatile GC	
F.	• LC/MS or HPLC	
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H.	• General Chemistry	
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Project Narrative

(D9A130190)

With the exceptions noted on the data sheets, standard analytical protocols were followed in the analyses of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within acceptable limits.

25438

CHAIN OF CUSTODY RECORD

LEGS Laboratory for Environmental and Geological Studies
University of Colorado, Boulder CO 80501-0250

PROJECT NAME N I70

PROJECT NO. EPA - 0098

Field Log Book Reference No. _____

	SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	ANALYSIS	REMARKS
-1	ND-98-1882				ICP/ICPAS SW846 6010/6020	WESTON splits
-2	ND-98-1904					
-3	ND-98-1956					
-4	ND-98-1883					
-5	ND-98-1894					
-6	ND-98-1895					
-7	ND-98-1918					
-8	ND-98-1935					
-9	ND-98-1941					
-10	ND-98-3101					
-11	ND-98-3125					
-12	ND-98 3209					
-13	ND-98 2998					

SAMPLED BY (SIGN) _____

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
[signature]	[signature]		
DATE/TIME	DATE/TIME 1/12/99 0936	DATE/TIME	DATE/TIME

METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY BY (SIGN)	DATE/TIME
Hand Deliver	[signature]	[signature]	1/14/99 0940

3

CHAIN OF CUSTODY RECORD

LEGS Laboratory for Environmental and Geological Studies
University of Colorado, Boulder CO 80501-0250

PROJECT NAME N. I70

PROJECT NO. EPA-0098

Field Log Book Reference No. _____

	SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	ANALYSIS	REMARKS
-14	ND-98 - 2995				~~ICPMS~~ TCP/ICPMS SW846 6010/6020	WESTON
-15	ND-98 - 3204					~~plts~~

SAMPLED BY (SIGN) _____

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
[signature]	[signature]		
DATE/TIME	DATE/TIME 1/12/99 0936	DATE/TIME	DATE/TIME

METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY BY (SIGN)	DATE/TIME
Hand Deliver	[signature]	[signature]	1/12/99 0940

Quanterra - Denver
Sample Receiving Checklist

Lot #: D9A130190 Date/Time Received: 1/12/99 0940

Company Name & Sampling Site: Roy F Weston

*Cooler #(s): —

Temperatures: —

Unpacking & Labeling Check Points:

N/A	Yes	No		Initials
	☑	☐	1. Radiation checked, record if reading > 0.5 mR/hr. (_____mR/hr)	MO
	☑	☐	2. Cooler seals intact.	
	☑	☐	3. Chain of custody present.	
	☐	☑	4. Bottles broken and/or are leaking, comment if yes.	
			PHOTOGRAPH BROKEN BOTTLES	
	☑	☐	5. Containers labeled, comment if no.	
	☐	☑	6. pH of all samples checked and meet requirements, note exceptions.	
	☑	☐	7. Chain of custody includes "received by" and "relinquished" by signatures, dates, and times.	
	☐	☑	8. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	9. Chain of custody agrees with bottle count, comment if no.	
	☑	☐	10. Chain of custody agrees with labels, comment if no.	
☑	☐	☐	11. VOA samples filled completely, comment if no.	
☑	☐	☐	12. VOA bottles preserved, check for labels.	
	☐	☑	13. Did samples require preservation with sodium thiosulfate?	
☐	☐	☑	14. If yes to #12, did the samples contain residual chlorine?	
☐	☐	☑	15. Sediment present in "D," dissolved, bottles.	
	☐	☑	16. Are analyses with short holding times requested?	
☐	☐	☑	17. Is extra sample volume provided for MS, MSD or matrix duplicates?	
	☐	☑	18. Multiphase samples present? If yes, comment below.	
	☐	☑	19. Any subsampling for volatiles? If yes, list samples.	
			PHOTOGRAPH MULTIPHASE SAMPLES	
☐	☐	☐	20. Clear picture taken, labeled, and stapled to project folder.	
☐	☐	☐	21. Subcontract COC signed and sent with samples to bottle prep?	
	☐	☐	22. Was sample labeling double checked by a second person?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR)

EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1882 01/11/99 001				
Silver	0.33	0.10	mg/kg	SW846 6020
Arsenic	12.8	1.0	mg/kg	SW846 6020
Barium	124	0.10	mg/kg	SW846 6020
Cobalt	7.7	0.50	mg/kg	SW846 6020
Chromium	10.4	0.50	mg/kg	SW846 6020
Manganese	216	0.50	mg/kg	SW846 6020
Nickel	6.4	0.50	mg/kg	SW846 6020
Lead	136	25.0	mg/kg	SW846 6020
Antimony	0.20 B	6.0	mg/kg	SW846 6020
Selenium	0.40 B	0.50	mg/kg	SW846 6020
Thallium	0.19 B	1.0	mg/kg	SW846 6020
Vanadium	12.4	2.5	mg/kg	SW846 6020
Calcium	4710	20.0	mg/kg	SW846 6010B
Aluminum	8470	10.0	mg/kg	SW846 6010B
Beryllium	0.56	0.20	mg/kg	SW846 6010B
Cadmium	3.3	0.50	mg/kg	SW846 6010B
Copper	27.0	2.0	mg/kg	SW846 6010B
Iron	14900	10.0	mg/kg	SW846 6010B
Potassium	2800	500	mg/kg	SW846 6010B
Magnesium	2240	20.0	mg/kg	SW846 6010B
Sodium	208 B	500	mg/kg	SW846 6010B
Zinc	304	2.0	mg/kg	SW846 6010B
ND-98-1904 01/11/99 002				
Silver	0.99	0.10	mg/kg	SW846 6020
Arsenic	248	5.0	mg/kg	SW846 6020
Barium	124	0.10	mg/kg	SW846 6020
Cobalt	10.6	0.50	mg/kg	SW846 6020
Chromium	13.9	0.50	mg/kg	SW846 6020
Manganese	216	0.50	mg/kg	SW846 6020
Nickel	5.9	0.50	mg/kg	SW846 6020
Lead	176	25.0	mg/kg	SW846 6020
Antimony	0.43 B	6.0	mg/kg	SW846 6020
Selenium	0.74	0.50	mg/kg	SW846 6020
Thallium	0.26 B	1.0	mg/kg	SW846 6020
Vanadium	12.1	2.5	mg/kg	SW846 6020
Calcium	3670	20.0	mg/kg	SW846 6010B
Aluminum	7960	10.0	mg/kg	SW846 6010B
Beryllium	0.57	0.20	mg/kg	SW846 6010B
Cadmium	6.9	0.50	mg/kg	SW846 6010B
Copper	23.9	2.0	mg/kg	SW846 6010B
Iron	13700	10.0	mg/kg	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1904 01/11/99 002				
Potassium	2110	500	mg/kg	SW846 6010B
Magnesium	2170	20.0	mg/kg	SW846 6010B
Sodium	140 B	500	mg/kg	SW846 6010B
Zinc	181	2.0	mg/kg	SW846 6010B
ND-98-1956 01/11/99 003				
Silver	0.80	0.10	mg/kg	SW846 6020
Arsenic	204	5.0	mg/kg	SW846 6020
Barium	135	0.10	mg/kg	SW846 6020
Cobalt	14.5	0.50	mg/kg	SW846 6020
Chromium	15.8	0.50	mg/kg	SW846 6020
Manganese	220	0.50	mg/kg	SW846 6020
Nickel	6.5	0.50	mg/kg	SW846 6020
Lead	184	25.0	mg/kg	SW846 6020
Antimony	0.38 B	6.0	mg/kg	SW846 6020
Selenium	0.63	0.50	mg/kg	SW846 6020
Thallium	0.25 B	1.0	mg/kg	SW846 6020
Vanadium	13.5	2.5	mg/kg	SW846 6020
Calcium	3040	20.0	mg/kg	SW846 6010B
Aluminum	8340	10.0	mg/kg	SW846 6010B
Beryllium	0.53	0.20	mg/kg	SW846 6010B
Cadmium	6.8	0.50	mg/kg	SW846 6010B
Copper	27.6	2.0	mg/kg	SW846 6010B
Iron	14400	10.0	mg/kg	SW846 6010B
Potassium	2030	500	mg/kg	SW846 6010B
Magnesium	2140	20.0	mg/kg	SW846 6010B
Sodium	157 B	500	mg/kg	SW846 6010B
Zinc	134	2.0	mg/kg	SW846 6010B
ND-98-1883 01/11/99 004				
Silver	1.0	0.10	mg/kg	SW846 6020
Arsenic	157	5.0	mg/kg	SW846 6020
Barium	129	0.10	mg/kg	SW846 6020
Cobalt	13.9	0.50	mg/kg	SW846 6020
Chromium	19.7	0.50	mg/kg	SW846 6020
Manganese	227	0.50	mg/kg	SW846 6020
Nickel	6.5	0.50	mg/kg	SW846 6020
Lead	150	25.0	mg/kg	SW846 6020
Antimony	0.38 B	6.0	mg/kg	SW846 6020
Selenium	0.60	0.50	mg/kg	SW846 6020
Thallium	0.25 B	1.0	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1883 01/11/99 004				
Vanadium	14.7	2.5	mg/kg	SW846 6020
Calcium	4190	20.0	mg/kg	SW846 6010B
Aluminum	7530	10.0	mg/kg	SW846 6010B
Beryllium	0.48	0.20	mg/kg	SW846 6010B
Cadmium	6.3	0.50	mg/kg	SW846 6010B
Copper	21.7	2.0	mg/kg	SW846 6010B
Iron	15700	10.0	mg/kg	SW846 6010B
Potassium	1750	500	mg/kg	SW846 6010B
Magnesium	2100	20.0	mg/kg	SW846 6010B
Sodium	143 B	500	mg/kg	SW846 6010B
Zinc	166	2.0	mg/kg	SW846 6010B
ND-98-1894 01/11/99 005				
Silver	0.78	0.10	mg/kg	SW846 6020
Arsenic	206	5.0	mg/kg	SW846 6020
Barium	108	0.10	mg/kg	SW846 6020
Cobalt	15.3	0.50	mg/kg	SW846 6020
Chromium	25.0	0.50	mg/kg	SW846 6020
Manganese	233	0.50	mg/kg	SW846 6020
Nickel	6.5	0.50	mg/kg	SW846 6020
Lead	134	25.0	mg/kg	SW846 6020
Antimony	0.39 B	6.0	mg/kg	SW846 6020
Selenium	0.61	0.50	mg/kg	SW846 6020
Thallium	0.25 B	1.0	mg/kg	SW846 6020
Vanadium	11.7	2.5	mg/kg	SW846 6020
Calcium	3610	20.0	mg/kg	SW846 6010B
Aluminum	8790	10.0	mg/kg	SW846 6010B
Beryllium	0.60	0.20	mg/kg	SW846 6010B
Cadmium	5.8	0.50	mg/kg	SW846 6010B
Copper	21.2	2.0	mg/kg	SW846 6010B
Iron	15100	10.0	mg/kg	SW846 6010B
Potassium	2570	500	mg/kg	SW846 6010B
Magnesium	2420	20.0	mg/kg	SW846 6010B
Sodium	194 B	500	mg/kg	SW846 6010B
Zinc	131	2.0	mg/kg	SW846 6010B
ND-98-1895 01/11/99 006				
Silver	0.50	0.10	mg/kg	SW846 6020
Arsenic	186	5.0	mg/kg	SW846 6020
Barium	98.6	0.10	mg/kg	SW846 6020
Cobalt	16.4	0.50	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1895 01/11/99 006				
Chromium	25.6	0.50	mg/kg	SW846 6020
Manganese	232	0.50	mg/kg	SW846 6020
Nickel	5.7	0.50	mg/kg	SW846 6020
Lead	107	25.0	mg/kg	SW846 6020
Antimony	0.32 B	6.0	mg/kg	SW846 6020
Selenium	0.50	0.50	mg/kg	SW846 6020
Thallium	0.23 B	1.0	mg/kg	SW846 6020
Vanadium	11.2	2.5	mg/kg	SW846 6020
Calcium	3320	20.0	mg/kg	SW846 6010B
Aluminum	8020	10.0	mg/kg	SW846 6010B
Beryllium	0.48	0.20	mg/kg	SW846 6010B
Cadmium	4.3	0.50	mg/kg	SW846 6010B
Copper	21.3	2.0	mg/kg	SW846 6010B
Iron	13700	10.0	mg/kg	SW846 6010B
Potassium	2300	500	mg/kg	SW846 6010B
Magnesium	2240	20.0	mg/kg	SW846 6010B
Sodium	142 B	500	mg/kg	SW846 6010B
Zinc	110	2.0	mg/kg	SW846 6010B
ND-98-1918 01/11/99 007				
Silver	0.86	0.10	mg/kg	SW846 6020
Arsenic	204	5.0	mg/kg	SW846 6020
Barium	113	0.10	mg/kg	SW846 6020
Cobalt	8.6	0.50	mg/kg	SW846 6020
Chromium	23.7	0.50	mg/kg	SW846 6020
Manganese	233	0.50	mg/kg	SW846 6020
Nickel	6.4	0.50	mg/kg	SW846 6020
Lead	132	25.0	mg/kg	SW846 6020
Antimony	0.25 B	6.0	mg/kg	SW846 6020
Selenium	0.63	0.50	mg/kg	SW846 6020
Thallium	0.25 B	1.0	mg/kg	SW846 6020
Vanadium	13.7	2.5	mg/kg	SW846 6020
Calcium	3320	20.0	mg/kg	SW846 6010B
Aluminum	9320	10.0	mg/kg	SW846 6010B
Beryllium	0.60	0.20	mg/kg	SW846 6010B
Cadmium	6.9	0.50	mg/kg	SW846 6010B
Copper	20.4	2.0	mg/kg	SW846 6010B
Iron	15900	10.0	mg/kg	SW846 6010B
Potassium	2620	500	mg/kg	SW846 6010B
Magnesium	2410	20.0	mg/kg	SW846 6010B
Sodium	196 B	500	mg/kg	SW846 6010B
Zinc	150	2.0	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1935 01/11/99 008				
Silver	0.71	0.10	mg/kg	SW846 6020
Arsenic	166	5.0	mg/kg	SW846 6020
Barium	113	0.10	mg/kg	SW846 6020
Cobalt	8.9	0.50	mg/kg	SW846 6020
Chromium	15.6	0.50	mg/kg	SW846 6020
Manganese	242	0.50	mg/kg	SW846 6020
Nickel	6.8	0.50	mg/kg	SW846 6020
Lead	135	25.0	mg/kg	SW846 6020
Antimony	0.28 B	6.0	mg/kg	SW846 6020
Selenium	0.57	0.50	mg/kg	SW846 6020
Thallium	0.26 B	1.0	mg/kg	SW846 6020
Vanadium	13.2	2.5	mg/kg	SW846 6020
Calcium	3280	20.0	mg/kg	SW846 6010B
Aluminum	8350	10.0	mg/kg	SW846 6010B
Beryllium	0.51	0.20	mg/kg	SW846 6010B
Cadmium	6.4	0.50	mg/kg	SW846 6010B
Copper	21.7	2.0	mg/kg	SW846 6010B
Iron	14300	10.0	mg/kg	SW846 6010B
Potassium	2380	500	mg/kg	SW846 6010B
Magnesium	2280	20.0	mg/kg	SW846 6010B
Sodium	131 B	500	mg/kg	SW846 6010B
Zinc	148	2.0	mg/kg	SW846 6010B
ND-98-1941 01/11/99 009				
Silver	1.0	0.10	mg/kg	SW846 6020
Arsenic	333	5.0	mg/kg	SW846 6020
Barium	104	0.10	mg/kg	SW846 6020
Cobalt	7.9	0.50	mg/kg	SW846 6020
Chromium	27.9	0.50	mg/kg	SW846 6020
Manganese	230	0.50	mg/kg	SW846 6020
Nickel	6.6	0.50	mg/kg	SW846 6020
Lead	198	25.0	mg/kg	SW846 6020
Antimony	0.90 B	6.0	mg/kg	SW846 6020
Selenium	0.73	0.50	mg/kg	SW846 6020
Thallium	0.32 B	1.0	mg/kg	SW846 6020
Vanadium	12.5	2.5	mg/kg	SW846 6020
Calcium	3700	20.0	mg/kg	SW846 6010B
Aluminum	7430	10.0	mg/kg	SW846 6010B
Beryllium	0.51	0.20	mg/kg	SW846 6010B
Cadmium	7.3	0.50	mg/kg	SW846 6010B
Copper	22.5	2.0	mg/kg	SW846 6010B
Iron	12900	10.0	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-1941 01/11/99 009				
Potassium	1840	500	mg/kg	SW846 6010B
Magnesium	2120	20.0	mg/kg	SW846 6010B
Sodium	138 B	500	mg/kg	SW846 6010B
Zinc	168	2.0	mg/kg	SW846 6010B
ND-98-3101 01/11/99 010				
Silver	2.8	0.10	mg/kg	SW846 6020
Arsenic	69.3	1.0	mg/kg	SW846 6020
Barium	126	0.10	mg/kg	SW846 6020
Cobalt	5.9	2.0	mg/kg	SW846 6020
Chromium	10.4	2.0	mg/kg	SW846 6020
Manganese	385	2.0	mg/kg	SW846 6020
Nickel	12.0	2.0	mg/kg	SW846 6020
Lead	931	100	mg/kg	SW846 6020
Antimony	0.70 B	6.0	mg/kg	SW846 6020
Selenium	1.2	0.50	mg/kg	SW846 6020
Thallium	0.96 B	1.0	mg/kg	SW846 6020
Vanadium	19.4	10.0	mg/kg	SW846 6020
Calcium	19900	20.0	mg/kg	SW846 6010B
Aluminum	16400	10.0	mg/kg	SW846 6010B
Beryllium	1.1	0.20	mg/kg	SW846 6010B
Cadmium	38.4	0.50	mg/kg	SW846 6010B
Copper	111	2.0	mg/kg	SW846 6010B
Iron	21100	10.0	mg/kg	SW846 6010B
Potassium	4090	500	mg/kg	SW846 6010B
Magnesium	7420	20.0	mg/kg	SW846 6010B
Sodium	252 B	500	mg/kg	SW846 6010B
Zinc	307	2.0	mg/kg	SW846 6010B
ND-98-3125 01/11/99 011				
Silver	0.26	0.10	mg/kg	SW846 6020
Arsenic	12.9	1.0	mg/kg	SW846 6020
Barium	62.0	0.10	mg/kg	SW846 6020
Cobalt	8.6	0.50	mg/kg	SW846 6020
Chromium	59.7	0.50	mg/kg	SW846 6020
Manganese	376	0.50	mg/kg	SW846 6020
Nickel	26.7	0.50	mg/kg	SW846 6020
Lead	122	25.0	mg/kg	SW846 6020
Antimony	0.25 B	6.0	mg/kg	SW846 6020
Selenium	0.72	0.50	mg/kg	SW846 6020
Thallium	0.37 B	1.0	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-3125 01/11/99 011				
Vanadium	12.1	2.5	mg/kg	SW846 6020
Calcium	21900	20.0	mg/kg	SW846 6010B
Aluminum	12000	10.0	mg/kg	SW846 6010B
Beryllium	0.69	0.20	mg/kg	SW846 6010B
Cadmium	2.9	0.50	mg/kg	SW846 6010B
Copper	95.5	2.0	mg/kg	SW846 6010B
Iron	30500	10.0	mg/kg	SW846 6010B
Potassium	1610	500	mg/kg	SW846 6010B
Magnesium	8780	20.0	mg/kg	SW846 6010B
Sodium	112 B	500	mg/kg	SW846 6010B
Zinc	394	2.0	mg/kg	SW846 6010B
ND-98-3209 01/11/99 012				
Silver	0.26	0.10	mg/kg	SW846 6020
Arsenic	8.8	1.0	mg/kg	SW846 6020
Barium	335	0.50	mg/kg	SW846 6020
Cobalt	8.5	0.50	mg/kg	SW846 6020
Chromium	39.7	0.50	mg/kg	SW846 6020
Manganese	366	0.50	mg/kg	SW846 6020
Nickel	52.5	0.50	mg/kg	SW846 6020
Lead	8.7	5.0	mg/kg	SW846 6020
Antimony	0.097 B	6.0	mg/kg	SW846 6020
Selenium	0.99	0.50	mg/kg	SW846 6020
Thallium	0.19 B	1.0	mg/kg	SW846 6020
Vanadium	37.1	2.5	mg/kg	SW846 6020
Calcium	12500	20.0	mg/kg	SW846 6010B
Aluminum	19600	10.0	mg/kg	SW846 6010B
Beryllium	0.78	0.20	mg/kg	SW846 6010B
Copper	29.5	2.0	mg/kg	SW846 6010B
Iron	25400	10.0	mg/kg	SW846 6010B
Potassium	3240	500	mg/kg	SW846 6010B
Magnesium	11500	20.0	mg/kg	SW846 6010B
Sodium	630	500	mg/kg	SW846 6010B
Zinc	81.9	2.0	mg/kg	SW846 6010B
ND-98-2998 01/11/99 013				
Silver	14.0	0.10	mg/kg	SW846 6020
Arsenic	353	100	mg/kg	SW846 6020
Barium	0.27	0.10	mg/kg	SW846 6020
Cobalt	3.4	0.10	mg/kg	SW846 6020
Chromium	7.9	0.10	mg/kg	SW846 6020

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-2998 01/11/99 013				
Manganese	955	0.10	mg/kg	SW846 6020
Nickel	10.7	0.10	mg/kg	SW846 6020
Lead	2380	500	mg/kg	SW846 6020
Antimony	4.7 B	6.0	mg/kg	SW846 6020
Selenium	6.4	0.50	mg/kg	SW846 6020
Thallium	5.4	1.0	mg/kg	SW846 6020
Vanadium	3.2	0.50	mg/kg	SW846 6020
Calcium	33300	100	mg/kg	SW846 6010B
Aluminum	2130	50.0	mg/kg	SW846 6010B
Cadmium	20.0	2.5	mg/kg	SW846 6010B
Copper	998	10.0	mg/kg	SW846 6010B
Iron	154000	50.0	mg/kg	SW846 6010B
Potassium	1070 B	2500	mg/kg	SW846 6010B
Magnesium	2830	100	mg/kg	SW846 6010B
Zinc	3220	10.0	mg/kg	SW846 6010B
ND-98-2995 01/11/99 014				
Silver	1.9	0.10	mg/kg	SW846 6020
Arsenic	64.3	1.0	mg/kg	SW846 6020
Barium	48.4	0.10	mg/kg	SW846 6020
Cobalt	9.8	0.10	mg/kg	SW846 6020
Chromium	20.4	0.10	mg/kg	SW846 6020
Manganese	224	0.10	mg/kg	SW846 6020
Nickel	9.0	0.10	mg/kg	SW846 6020
Lead	2900	500	mg/kg	SW846 6020
Antimony	53.0	6.0	mg/kg	SW846 6020
Selenium	5.1	0.50	mg/kg	SW846 6020
Thallium	0.53 B	1.0	mg/kg	SW846 6020
Vanadium	14.2	0.50	mg/kg	SW846 6020
Calcium	45300	100	mg/kg	SW846 6010B
Aluminum	25800	50.0	mg/kg	SW846 6010B
Beryllium	0.62 B	1.0	mg/kg	SW846 6010B
Cadmium	413	2.5	mg/kg	SW846 6010B
Copper	280	10.0	mg/kg	SW846 6010B
Iron	11800	50.0	mg/kg	SW846 6010B
Potassium	38000	2500	mg/kg	SW846 6010B
Magnesium	5850	100	mg/kg	SW846 6010B
Sodium	44000	2500	mg/kg	SW846 6010B
Zinc	19400	10.0	mg/kg	SW846 6010B

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EXECUTIVE SUMMARY - Detection Highlights

D9A130190

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
ND-98-3204 01/11/99 015				
Silver	9.1	0.10	mg/kg	SW846 6020
Arsenic	11.2	1.0	mg/kg	SW846 6020
Barium	16.7	0.10	mg/kg	SW846 6020
Cobalt	6.5	0.10	mg/kg	SW846 6020
Chromium	29.3	0.10	mg/kg	SW846 6020
Manganese	141	0.10	mg/kg	SW846 6020
Nickel	3.6	0.10	mg/kg	SW846 6020
Lead	2150	500	mg/kg	SW846 6020
Antimony	0.42 B	6.0	mg/kg	SW846 6020
Selenium	2.2	0.50	mg/kg	SW846 6020
Thallium	0.13 B	1.0	mg/kg	SW846 6020
Vanadium	0.59	0.50	mg/kg	SW846 6020
Calcium	12800	100	mg/kg	SW846 6010B
Aluminum	3700	50.0	mg/kg	SW846 6010B
Beryllium	0.39 B	1.0	mg/kg	SW846 6010B
Cadmium	30.1	2.5	mg/kg	SW846 6010B
Copper	7070	10.0	mg/kg	SW846 6010B
Iron	23200	50.0	mg/kg	SW846 6010B
Potassium	1910 B	2500	mg/kg	SW846 6010B
Magnesium	394	100	mg/kg	SW846 6010B
Sodium	2450 B	2500	mg/kg	SW846 6010B
Zinc	27000	10.0	mg/kg	SW846 6010B

ANALYTICAL METHODS SUMMARY

D9A130190

PARAMETER	ANALYTICAL METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
ICP-MS (6020)	SW846 6020

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9A130190

ANALYTICAL METHOD	ANALYST	ANALYST ID
SW846 6010B	Tracy Anderson	009690
SW846 6010B	William G. Logan	002179
SW846 6020	Dave B. Roberts	002871

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D9A130190

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CPXA1	001	ND-98-1882	01/11/99	
CPXA3	002	ND-98-1904	01/11/99	
CPXA5	003	ND-98-1956	01/11/99	
CPXA6	004	ND-98-1883	01/11/99	
CPXA7	005	ND-98-1894	01/11/99	
CPXA8	006	ND-98-1895	01/11/99	
CPXA9	007	ND-98-1918	01/11/99	
CPXAA	008	ND-98-1935	01/11/99	
CPXAC	009	ND-98-1941	01/11/99	
CPXAD	010	ND-98-3101	01/11/99	
CPXAE	011	ND-98-3125	01/11/99	
CPXAF	012	ND-98-3209	01/11/99	
CPXAG	013	ND-98-2998	01/11/99	
CPXAH	014	ND-98-2995	01/11/99	
CPXAJ	015	ND-98-3204	01/11/99	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9A130190

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
002	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
003	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
004	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
005	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
006	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
007	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
008	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
009	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
010	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
011	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
012	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
013	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057
014	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D9A130190

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
015	WG	SW846 6020		9019177	9019061
	WG	SW846 6010B		9019172	9019057

Quanterra, Inc.

Cover Page - Inorganic Analysis Data Package

Client ID	Lab Sample ID:
ND-98-1882	CPXA1
ND-98-1883	CPXA6
ND-98-1894	CPXA7
ND-98-1895	CPXA8
ND-98-1904	CPXA3
ND-98-1918	CPXA9
ND-98-1935	CPXAA
ND-98-1941	CPXAC
ND-98-1956	CPXA5
ND-98-2995	CPXAH
ND-98-2998	CPXAG
ND-98-3101	CPXAD
ND-98-3125	CPXAE
ND-98-3204	CPXAJ
ND-98-3209	CPXAF

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than conditions detailed above. Release of the data combined in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Richard Climkscales Name: Richard Climkscales

Date: 2/11/99 Title: Methods

WESTON, ROY F.

Client Sample ID: ND-98-1882

TOTAL Metals

Lot-Sample #...: D9A130190-001 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	4710	20.0	mg/kg	SW846 6010B	01/27/99	CPXA1103
Aluminum	8470	10.0	mg/kg	SW846 6010B	01/27/99	CPXA1101
Beryllium	0.56	0.20	mg/kg	SW846 6010B	01/27/99	CPXA1102
Cadmium	3.3	0.50	mg/kg	SW846 6010B	01/27/99	CPXA1107
Copper	27.0	2.0	mg/kg	SW846 6010B	01/27/99	CPXA1108
Iron	14900	10.0	mg/kg	SW846 6010B	01/27/99	CPXA1109
Potassium	2800	500	mg/kg	SW846 6010B	01/27/99	CPXA110A
Magnesium	2240	20.0	mg/kg	SW846 6010B	01/27/99	CPXA110C
Sodium	208 B	500	mg/kg	SW846 6010B	01/27/99	CPXA110D
Zinc	304	2.0	mg/kg	SW846 6010B	01/27/99	CPXA110E
Prep Batch #...: 9019177						
Silver	0.33	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA110F
Arsenic	12.8	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA110G
Barium	124	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA110H
Cobalt	7.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA110J
Chromium	10.4	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA110K
Manganese	216	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA110L
Nickel	6.4	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA110M
Lead	136	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA110N
Antimony	0.20 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA110P
Selenium	0.40 B	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA110Q
Thallium	0.19 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA110R
Vanadium	12.4	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA110T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1904

TOTAL Metals

Lot-Sample #...: D9A130190-002 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3670	20.0	mg/kg	SW846 6010B	01/27/99	CPXA3103
Aluminum	7960	10.0	mg/kg	SW846 6010B	01/27/99	CPXA3101
Beryllium	0.57	0.20	mg/kg	SW846 6010B	01/27/99	CPXA3102
Cadmium	6.9	0.50	mg/kg	SW846 6010B	01/27/99	CPXA3107
Copper	23.9	2.0	mg/kg	SW846 6010B	01/27/99	CPXA3108
Iron	13700	10.0	mg/kg	SW846 6010B	01/27/99	CPXA3109
Potassium	2110	500	mg/kg	SW846 6010B	01/27/99	CPXA310A
Magnesium	2170	20.0	mg/kg	SW846 6010B	01/27/99	CPXA310C
Sodium	140 B	500	mg/kg	SW846 6010B	01/27/99	CPXA310D
Zinc	181	2.0	mg/kg	SW846 6010B	01/27/99	CPXA310E
Prep Batch #...: 9019177						
Silver	0.99	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA310F
Arsenic	248	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA310G
Barium	124	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA310H
Cobalt	10.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA310J
Chromium	13.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA310K
Manganese	216	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA310L
Nickel	5.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA310M
Lead	176	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA310N
Antimony	0.43 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA310P
Selenium	0.74	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA310Q
Thallium	0.26 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA310R
Vanadium	12.1	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA310T

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1956

TOTAL Metals

Lot-Sample #...: D9A130190-003 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3040	20.0	mg/kg	SW846 6010B	01/27/99	CPXA5103
Aluminum	8340	10.0	mg/kg	SW846 6010B	01/27/99	CPXA5101
Beryllium	0.53	0.20	mg/kg	SW846 6010B	01/27/99	CPXA5102
Cadmium	6.8	0.50	mg/kg	SW846 6010B	01/27/99	CPXA5107
Copper	27.6	2.0	mg/kg	SW846 6010B	01/27/99	CPXA5108
Iron	14400	10.0	mg/kg	SW846 6010B	01/27/99	CPXA5109
Potassium	2030	500	mg/kg	SW846 6010B	01/27/99	CPXA510A
Magnesium	2140	20.0	mg/kg	SW846 6010B	01/27/99	CPXA510C
Sodium	157 B	500	mg/kg	SW846 6010B	01/27/99	CPXA510D
Zinc	134	2.0	mg/kg	SW846 6010B	01/27/99	CPXA510E
Prep Batch #...: 9019177						
Silver	0.80	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA510F
Arsenic	204	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA510G
Barium	135	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA510H
Cobalt	14.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA510J
Chromium	15.8	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA510K
Manganese	220	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA510L
Nickel	6.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA510M
Lead	184	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA510N
Antimony	0.38 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA510P
Selenium	0.63	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA510Q
Thallium	0.25 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA510R
Vanadium	13.5	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA510T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1883

TOTAL Metals

Lot-Sample #...: D9A130190-004 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	4190	20.0	mg/kg	SW846 6010B	01/27/99	CPXA6103
Aluminum	7530	10.0	mg/kg	SW846 6010B	01/27/99	CPXA6101
Beryllium	0.48	0.20	mg/kg	SW846 6010B	01/27/99	CPXA6102
Cadmium	6.3	0.50	mg/kg	SW846 6010B	01/27/99	CPXA6107
Copper	21.7	2.0	mg/kg	SW846 6010B	01/27/99	CPXA6108
Iron	15700	10.0	mg/kg	SW846 6010B	01/27/99	CPXA6109
Potassium	1750	500	mg/kg	SW846 6010B	01/27/99	CPXA610A
Magnesium	2100	20.0	mg/kg	SW846 6010B	01/27/99	CPXA610C
Sodium	143 B	500	mg/kg	SW846 6010B	01/27/99	CPXA610D
Zinc	166	2.0	mg/kg	SW846 6010B	01/27/99	CPXA610E
Prep Batch #...: 9019177						
Silver	1.0	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA610F
Arsenic	157	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA610G
Barium	129	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA610H
Cobalt	13.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA610J
Chromium	19.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA610K
Manganese	227	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA610L
Nickel	6.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA610M
Lead	150	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA610N
Antimony	0.38 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA610P
Selenium	0.60	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA610Q
Thallium	0.25 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA610R
Vanadium	14.7	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA610T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1894

TOTAL Metals

Lot-Sample #...: D9A130190-005 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3610	20.0	mg/kg	SW846 6010B	01/27/99	CPXA7103
Aluminum	8790	10.0	mg/kg	SW846 6010B	01/27/99	CPXA7101
Beryllium	0.60	0.20	mg/kg	SW846 6010B	01/27/99	CPXA7102
Cadmium	5.8	0.50	mg/kg	SW846 6010B	01/27/99	CPXA7107
Copper	21.2	2.0	mg/kg	SW846 6010B	01/27/99	CPXA7108
Iron	15100	10.0	mg/kg	SW846 6010B	01/27/99	CPXA7109
Potassium	2570	500	mg/kg	SW846 6010B	01/27/99	CPXA710A
Magnesium	2420	20.0	mg/kg	SW846 6010B	01/27/99	CPXA710C
Sodium	194 B	500	mg/kg	SW846 6010B	01/27/99	CPXA710D
Zinc	131	2.0	mg/kg	SW846 6010B	01/27/99	CPXA710E
Prep Batch #...: 9019177						
Silver	0.78	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA710F
Arsenic	206	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA710G
Barium	108	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA710H
Cobalt	15.3	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA710J
Chromium	25.0	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA710K
Manganese	233	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA710L
Nickel	6.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA710M
Lead	134	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA710N
Antimony	0.39 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA710P
Selenium	0.61	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA710Q
Thallium	0.25 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA710R
Vanadium	11.7	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA710T

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1895

TOTAL Metals

Lot-Sample #...: D9A130190-006 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3320	20.0	mg/kg	SW846 6010B	01/27/99	CPXA8103
Aluminum	8020	10.0	mg/kg	SW846 6010B	01/27/99	CPXA8101
Beryllium	0.48	0.20	mg/kg	SW846 6010B	01/27/99	CPXA8102
Cadmium	4.3	0.50	mg/kg	SW846 6010B	01/27/99	CPXA8107
Copper	21.3	2.0	mg/kg	SW846 6010B	01/27/99	CPXA8108
Iron	13700	10.0	mg/kg	SW846 6010B	01/27/99	CPXA8109
Potassium	2300	500	mg/kg	SW846 6010B	01/27/99	CPXA810A
Magnesium	2240	20.0	mg/kg	SW846 6010B	01/27/99	CPXA810C
Sodium	142 B	500	mg/kg	SW846 6010B	01/27/99	CPXA810D
Zinc	110	2.0	mg/kg	SW846 6010B	01/27/99	CPXA810E
Prep Batch #...: 9019177						
Silver	0.50	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA810F
Arsenic	186	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA810G
Barium	98.6	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA810H
Cobalt	16.4	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA810J
Chromium	25.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA810K
Manganese	232	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA810L
Nickel	5.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA810M
Lead	107	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA810N
Antimony	0.32 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA810P
Selenium	0.50	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA810Q
Thallium	0.23 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA810R
Vanadium	11.2	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA810T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1918

TOTAL Metals

Lot-Sample #...: D9A130190-007 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3320	20.0	mg/kg	SW846 6010B	01/27/99	CPXA9103
Aluminum	9320	10.0	mg/kg	SW846 6010B	01/27/99	CPXA9101
Beryllium	0.60	0.20	mg/kg	SW846 6010B	01/27/99	CPXA9102
Cadmium	6.9	0.50	mg/kg	SW846 6010B	01/27/99	CPXA9107
Copper	20.4	2.0	mg/kg	SW846 6010B	01/27/99	CPXA9108
Iron	15900	10.0	mg/kg	SW846 6010B	01/27/99	CPXA9109
Potassium	2620	500	mg/kg	SW846 6010B	01/27/99	CPXA910A
Magnesium	2410	20.0	mg/kg	SW846 6010B	01/27/99	CPXA910C
Sodium	196 B	500	mg/kg	SW846 6010B	01/27/99	CPXA910D
Zinc	150	2.0	mg/kg	SW846 6010B	01/27/99	CPXA910E
Prep Batch #...: 9019177						
Silver	0.86	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA910F
Arsenic	204	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA910G
Barium	113	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXA910H
Cobalt	8.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA910J
Chromium	23.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA910K
Manganese	233	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA910L
Nickel	6.4	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA910M
Lead	132	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA910N
Antimony	0.25 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA910P
Selenium	0.63	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXA910Q
Thallium	0.25 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXA910R
Vanadium	13.7	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXA910T

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

WESTON, ROY F.

Client Sample ID: ND-98-1935

TOTAL Metals

Lot-Sample #...: D9A130190-008 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3280	20.0	mg/kg	SW846 6010B	01/27/99	CPXAA103
Aluminum	8350	10.0	mg/kg	SW846 6010B	01/27/99	CPXAA101
Beryllium	0.51	0.20	mg/kg	SW846 6010B	01/27/99	CPXAA102
Cadmium	6.4	0.50	mg/kg	SW846 6010B	01/27/99	CPXAA107
Copper	21.7	2.0	mg/kg	SW846 6010B	01/27/99	CPXAA108
Iron	14300	10.0	mg/kg	SW846 6010B	01/27/99	CPXAA109
Potassium	2380	500	mg/kg	SW846 6010B	01/27/99	CPXAA10A
Magnesium	2280	20.0	mg/kg	SW846 6010B	01/27/99	CPXAA10C
Sodium	131 B	500	mg/kg	SW846 6010B	01/27/99	CPXAA10D
Zinc	148	2.0	mg/kg	SW846 6010B	01/27/99	CPXAA10E
Prep Batch #...: 9019177						
Silver	0.71	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10F
Arsenic	166	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10G
Barium	113	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10H
Cobalt	8.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10J
Chromium	15.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10K
Manganese	242	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10L
Nickel	6.8	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10M
Lead	135	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10N
Antimony	0.28 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10P
Selenium	0.57	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10Q
Thallium	0.26 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10R
Vanadium	13.2	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXAA10T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-1941

TOTAL Metals

Lot-Sample #...: D9A130190-009 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	3700	20.0	mg/kg	SW846 6010B	01/27/99	CPXAC103
Aluminum	7430	10.0	mg/kg	SW846 6010B	01/27/99	CPXAC101
Beryllium	0.51	0.20	mg/kg	SW846 6010B	01/27/99	CPXAC102
Cadmium	7.3	0.50	mg/kg	SW846 6010B	01/27/99	CPXAC107
Copper	22.5	2.0	mg/kg	SW846 6010B	01/27/99	CPXAC108
Iron	12900	10.0	mg/kg	SW846 6010B	01/27/99	CPXAC109
Potassium	1840	500	mg/kg	SW846 6010B	01/27/99	CPXAC10A
Magnesium	2120	20.0	mg/kg	SW846 6010B	01/27/99	CPXAC10C
Sodium	138 B	500	mg/kg	SW846 6010B	01/27/99	CPXAC10D
Zinc	168	2.0	mg/kg	SW846 6010B	01/27/99	CPXAC10E
Prep Batch #...: 9019177						
Silver	1.0	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10F
Arsenic	333	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10G
Barium	104	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10H
Cobalt	7.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10J
Chromium	27.9	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10K
Manganese	230	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10L
Nickel	6.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10M
Lead	198	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10N
Antimony	0.90 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10P
Selenium	0.73	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10Q
Thallium	0.32 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10R
Vanadium	12.5	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXAC10T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-3101

TOTAL Metals

Lot-Sample #...: D9A130190-010 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	19900	20.0	mg/kg	SW846 6010B	01/27/99	CPXAD103
Aluminum	16400	10.0	mg/kg	SW846 6010B	01/27/99	CPXAD101
Beryllium	1.1	0.20	mg/kg	SW846 6010B	01/27/99	CPXAD102
Cadmium	38.4	0.50	mg/kg	SW846 6010B	01/27/99	CPXAD107
Copper	111	2.0	mg/kg	SW846 6010B	01/27/99	CPXAD108
Iron	21100	10.0	mg/kg	SW846 6010B	01/27/99	CPXAD109
Potassium	4090	500	mg/kg	SW846 6010B	01/27/99	CPXAD10A
Magnesium	7420	20.0	mg/kg	SW846 6010B	01/27/99	CPXAD10C
Sodium	252 B	500	mg/kg	SW846 6010B	01/27/99	CPXAD10D
Zinc	307	2.0	mg/kg	SW846 6010B	01/27/99	CPXAD10E
Prep Batch #...: 9019177						
Silver	2.8	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10F
Arsenic	69.3	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10G
Barium	126	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10H
Cobalt	5.9	2.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10J
Chromium	10.4	2.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10K
Manganese	385	2.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10L
Nickel	12.0	2.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10M
Lead	931	100	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10N
Antimony	0.70 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10P
Selenium	1.2	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10Q
Thallium	0.96 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10R
Vanadium	19.4	10.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAD10T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-3125

TOTAL Metals

Lot-Sample #...: D9A130190-011 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	21900	20.0	mg/kg	SW846 6010B	01/27/99	CPXAE103
Aluminum	12000	10.0	mg/kg	SW846 6010B	01/27/99	CPXAE101
Beryllium	0.69	0.20	mg/kg	SW846 6010B	01/27/99	CPXAE102
Cadmium	2.9	0.50	mg/kg	SW846 6010B	01/27/99	CPXAE107
Copper	95.5	2.0	mg/kg	SW846 6010B	01/27/99	CPXAE108
Iron	30500	10.0	mg/kg	SW846 6010B	01/27/99	CPXAE109
Potassium	1610	500	mg/kg	SW846 6010B	01/27/99	CPXAE10A
Magnesium	8780	20.0	mg/kg	SW846 6010B	01/27/99	CPXAE10C
Sodium	112 B	500	mg/kg	SW846 6010B	01/27/99	CPXAE10D
Zinc	394	2.0	mg/kg	SW846 6010B	01/27/99	CPXAE10E
Prep Batch #...: 9019177						
Silver	0.26	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10F
Arsenic	12.9	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10G
Barium	62.0	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10H
Cobalt	8.6	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10J
Chromium	59.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10K
Manganese	376	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10L
Nickel	26.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10M
Lead	122	25.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10N
Antimony	0.25 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10P
Selenium	0.72	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10Q
Thallium	0.37 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10R
Vanadium	12.1	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXAE10T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-3209

TOTAL Metals

Lot-Sample #...: D9A130190-012 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	12500	20.0	mg/kg	SW846 6010B	01/27/99	CPXAF103
Aluminum	19600	10.0	mg/kg	SW846 6010B	01/27/99	CPXAF101
Beryllium	0.78	0.20	mg/kg	SW846 6010B	01/27/99	CPXAF102
Cadmium	ND	0.50	mg/kg	SW846 6010B	01/27/99	CPXAF107
Copper	29.5	2.0	mg/kg	SW846 6010B	01/27/99	CPXAF108
Iron	25400	10.0	mg/kg	SW846 6010B	01/27/99	CPXAF109
Potassium	3240	500	mg/kg	SW846 6010B	01/27/99	CPXAF10A
Magnesium	11500	20.0	mg/kg	SW846 6010B	01/27/99	CPXAF10C
Sodium	630	500	mg/kg	SW846 6010B	01/27/99	CPXAF10D
Zinc	81.9	2.0	mg/kg	SW846 6010B	01/27/99	CPXAF10E
Prep Batch #...: 9019177						
Silver	0.26	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10F
Arsenic	8.8	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10G
Barium	335	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10H
Cobalt	8.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10J
Chromium	39.7	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10K
Manganese	366	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10L
Nickel	52.5	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10M
Lead	8.7	5.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10N
Antimony	0.097 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10P
Selenium	0.99	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10Q
Thallium	0.19 B	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10R
Vanadium	37.1	2.5	mg/kg	SW846 6020	01/27-02/04/99	CPXAF10T

NOTE(S):

B Estimated result. Result is less than RL.

WESTON, ROY F.

Client Sample ID: ND-98-2998

TOTAL Metals

Lot-Sample #...: D9A130190-013 Matrix.....: WG
Date Sampled...: 01/11/99 Date Received..: 01/12/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9019172						
Calcium	33300	100	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG103
Aluminum	2130	50.0	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG101
Beryllium	ND	1.0	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG102
Cadmium	20.0	2.5	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG107
Copper	998	10.0	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG108
Iron	154000	50.0	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG109
Potassium	1070 B	2500	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG10A
Magnesium	2830	100	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG10C
Sodium	ND	2500	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG10D
Zinc	3220	10.0	mg/kg	SW846 6010B	01/27-01/28/99	CPXAG10E
Prep Batch #...: 9019177						
Silver	14.0	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10F
Arsenic	353	100	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10G
Barium	0.27	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10H
Cobalt	3.4	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10J
Chromium	7.9	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10K
Manganese	955	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10L
Nickel	10.7	0.10	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10M
Lead	2380	500	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10N
Antimony	4.7 B	6.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10P
Selenium	6.4	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10Q
Thallium	5.4	1.0	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10R
Vanadium	3.2	0.50	mg/kg	SW846 6020	01/27-02/04/99	CPXAG10T

NOTE(S):

B Estimated result. Result is less than RL.

FORM 1
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICP

Units: ug/L

Chart Number: 0127h.arc

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICV 1/27/99 9:59 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	5000	4991.9	**99.8**								
Beryllium	313.042	500	506.78	**101.4**								
Cadmium	228.802	500	507.7	**101.5**								
Calcium	317.933	20000	19843	**99.2**								
Copper	324.754	500	510.18	**102.0**								
Iron	259.94	500	5084.1	**1016.8**								
Magnesium	279.079	20000	20262	**101.3**								
Potassium	766.491	50000	49431	**98.9**								
Sodium	330.223	200000	202140	**101.1**								
Zinc	213.856	500	502.04	**100.4**								

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICP

Units: ug/L

Chart Number: 990127a.arc

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICV 1/27/99 6:04 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	5000	4993.2	**99.9**								
Beryllium	313.042	500	509.44	**101.9**								
Cadmium	228.802	500	513.75	**102.8**								
Calcium	317.933	20000	20034	**100.2**								
Copper	324.754	500	513.21	**102.6**								
Iron	259.94	500	5103.6	**1020.7**								
Magnesium	279.079	20000	20401	**102.0**								
Potassium	766.491	50000	50043	**100.1**								
Sodium	330.223	200000	203170	**101.6**								
Zinc	213.856	500	506.91	**101.4**								

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Verification Standard

Instrument: ICPMS

Units: ug/L

Chart Number: 020499R.rep

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 1 2/4/99 8:47 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	200	204.61	**102.3**								
Arsenic	75	200	197.65	**98.8**								
Barium	135	200	196.78	**98.4**								
Chromium	52	200	198.68	**99.3**								
Cobalt	59	200	191.76	**95.9**								
Lead	208	200	197.18	**98.6**								
Manganese	55	200	195.09	**97.5**								
Nickel	60	200	197.02	**98.5**								
Selenium	82	200	199.98	**100.0**								
Silver	107	200	198.8	**99.4**								
Thallium	205	200	197.18	**98.6**								
Vanadium	51	200	198.49	**99.2**								

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP

Units: ug/L

Chart Number: 0127h.arc

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	CCV1 1/27/99 10:16 PM Found	% Rec	CCV2 1/27/99 11:24 PM Found	% Rec	CCV3 1/28/99 12:12 AM Found	% Rec	CCV4 1/28/99 12:33 AM Found	% Rec	CCV5 1/28/99 1:15 AM Found	% Rec
Aluminum	308.215	5000	5001.3	**100.0**	4995.3	**99.9**	5061.4	**101.2**	5063.9	**101.3**	5103.2	**102.1**
Beryllium	313.042	500	504.92	**101.0**	504.68	**100.9**	508.64	**101.7**	508.21	**101.6**	508.05	**101.6**
Cadmium	228.802	500	502.43	**100.5**	502.52	**100.5**	512.88	**102.6**	511.58	**102.3**	514.11	**102.8**
Calcium	317.933	20000	20035	**100.2**	20038	**100.2**	20293	**101.5**	20215	**101.1**	20395	**102.0**
Copper	324.754	500	504.25	**100.8**	498.42	**99.7**	506.43	**101.3**	504.1	**100.8**	508.39	**101.7**
Iron	259.94	5000	5075.5	**101.5**	5047.2	**100.9**	5102.7	**102.1**	5093.1	**101.9**	5116.8	**102.3**
Magnesium	279.079	20000	20170	**100.8**	20195	**101.0**	20450	**102.2**	20403	**102.0**	20565	**102.8**
Potassium	766.491	50000	99477	**199.0**	100460	**200.9**	100990	**202.0**	100980	**202.0**	101610	**203.2**
Sodium	330.223	200000	201100	**100.6**	202250	**101.1**	204920	**102.5**	204090	**102.0**	206450	**103.2**
Zinc	213.856	500	499.64	**99.9**	500.38	**100.1**	513	**102.6**	507.17	**101.4**	511.85	**102.4**

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP

Units: ug/L

Chart Number: 0127h.arc

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	CCV6 1/28/99 1:54 AM Found	% Rec	CCV7 1/28/99 2:29 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	5000	5140.6	**102.8**	5206.7	**104.1**						
Beryllium	313.042	500	507.26	**101.5**	508.46	**101.7**						
Cadmium	228.802	500	510.14	**102.0**	517.1	**103.4**						
Calcium	317.933	20000	20417	**102.1**	20596	**103.0**						
Copper	324.754	500	509.75	**102.0**	513.09	**102.6**						
Iron	259.94	5000	5128.9	**102.6**	5192.6	**103.9**						
Magnesium	279.079	20000	20580	**102.9**	20812	**104.1**						
Potassium	766.491	50000	102020	**204.0**	101910	**203.8**						
Sodium	330.223	200000	206610	**103.3**	207420	**103.7**						
Zinc	213.856	500	510.64	**102.1**	516.48	**103.3**						

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICP

Units: ug/L

Chart Number: 990127a.arc

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	CCV1 1/27/99 6:22 PM Found	% Rec	CCV2 1/27/99 7:08 PM Found	% Rec	CCV3 1/27/99 7:51 PM Found	% Rec	CCV4 1/27/99 8:27 PM Found	% Rec	CCV5 1/27/99 8:48 PM Found	% Rec
Aluminum	308.215	5000	5026.8	**100.5**	5047.4	**100.9**	5053.4	**101.1**	5139.9	**102.8**	5069.9	**101.4**
Beryllium	313.042	500	508.35	**101.7**	506.3	**101.3**	508.52	**101.7**	512.36	**102.5**	507.44	**101.5**
Cadmium	228.802	500	508.4	**101.7**	516.63	**103.3**	529.51	**105.9**	527.12	**105.4**	517.97	**103.6**
Calcium	317.933	20000	20255	**101.3**	20430	**102.1**	20653	**103.3**	20848	**104.2**	20478	**102.4**
Copper	324.754	500	506.69	**101.3**	505.77	**101.2**	503.27	**100.7**	500.32	**100.1**	501.74	**100.3**
Iron	259.94	5000	5104	**102.1**	5102.8	**102.1**	5122.9	**102.5**	5179.6	**103.6**	5122.7	**102.5**
Magnesium	279.079	20000	20350	**101.7**	20402	**102.0**	20441	**102.2**	20564	**102.8**	20458	**102.3**
Potassium	766.491	50000	100630	**201.3**	100390	**200.8**	100580	**201.2**	101240	**202.5**	101190	**202.4**
Sodium	330.223	200000	203060	**101.5**	203040	**101.5**	203920	**102.0**	206100	**103.0**	205520	**102.8**
Zinc	213.856	500	505.57	**101.1**	509.44	**101.9**	517.83	**103.6**	518.64	**103.7**	517.3	**103.5**

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS

Units: ug/L

Chart Number: 020499R.rep

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 3 2/4/99 9:12 AM Found	% Rec	QC Std 3 2/4/99 10:10 AM Found	% Rec	QC Std 3 2/4/99 11:01 AM Found	% Rec	QC Std 3 2/4/99 11:33 AM Found	% Rec	QC Std 3 2/4/99 12:04 PM Found	% Rec
Antimony	121	100	101.12	**101.1**	100.47	**100.5**	101.53	**101.5**	99.367	**99.4**	103.98	**104.0**
Arsenic	75	100	102.67	**102.7**	103.81	**103.8**	104.88	**104.9**	100.33	**100.3**	99.72	**99.7**
Barium	135	100	98.465	**98.5**	99.303	**99.3**	99.629	**99.6**	96.924	**96.9**	102.32	**102.3**
Chromium	52	100	98.987	**99.0**	99.992	**100.0**	96.509	**96.5**	101.76	**101.8**	99.003	**99.0**
Cobalt	59	100	98.182	**98.2**	98.304	**98.3**	94.791	**94.8**	95.926	**95.9**	102.3	**102.3**
Lead	208	100	99.681	**99.7**	97.639	**97.6**	94.955	**95.0**	98.674	**98.7**	100.58	**100.6**
Manganese	55	100	99.61	**99.6**	100.32	**100.3**	97.107	**97.1**	100.33	**100.3**	100.33	**100.3**
Nickel	60	100	97.848	**97.8**	96.641	**96.6**	94.615	**94.6**	94.249	**94.2**	101.17	**101.2**
Selenium	82	100	102.68	**102.7**	102.76	**102.8**	103.66	**103.7**	100.66	**100.7**	98.905	**98.9**
Silver	107	100	100.23	**100.2**	98.898	**98.9**	101.7	**101.7**	102.22	**102.2**	100.85	**100.8**
Thallium	205	100	98.985	**99.0**	97.866	**97.9**	94.571	**94.6**	97.066	**97.1**	100.22	**100.2**
Vanadium	51	100	99.359	**99.4**	98.428	**98.4**	96.824	**96.8**	101.43	**101.4**	97.594	**97.6**

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Verification

Instrument: ICPMS

Units: ug/L

Chart Number: 020499R.rep

Acceptable Range: 90% - 110%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	QC Std 3 2/4/99 1:01 PM Found	% Rec	QC Std 3 2/4/99 1:57 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	100	102.17	**102.2**	100.88	**100.9**						
Arsenic	75	100	100.33	**100.3**	102.44	**102.4**						
Barium	135	100	102.26	**102.3**	101.74	**101.7**						
Chromium	52	100	102.42	**102.4**	97.945	**97.9**						
Cobalt	59	100	103.08	**103.1**	98.892	**98.9**						
Lead	208	100	98.591	**98.6**	99.618	**99.6**						
Manganese	55	100	103.56	**103.6**	98.405	**98.4**						
Nickel	60	100	102	**102.0**	99.095	**99.1**						
Selenium	82	100	98.231	**98.2**	102.82	**102.8**						
Silver	107	100	100.13	**100.1**	100.4	**100.4**						
Thallium	205	100	100.23	**100.2**	99.161	**99.2**						
Vanadium	51	100	100.97	**101.0**	96.821	**96.8**						

Quanterra, Inc.

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: ICP

Units: ug/L

Chart Number: 0127h.arc

Acceptable Range: 50% - 150%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	CRI 1/27/99 10:06 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	0	-11.86	**0.0**								
Beryllium	313.042	10	9.6	**96.0**								
Cadmium	228.802	10	9.36	**93.6**								
Calcium	317.933	0	2.87	**0.0**								
Copper	324.754	50	52.14	**104.3**								
Iron	259.94	100	-2.27	**-2.3**								
Magnesium	279.079	0	0.76	**0.0**								
Potassium	766.491	0	-186.14	**0.0**								
Sodium	330.223	0	303.94	**0.0**								
Zinc	213.856	40	41.14	**102.8**								

Quanterra, Inc.

Metals Data Reporting Form

Contract Required Detection Limit Standard

Instrument: ICP

Units: ug/L

Chart Number: 990127a.arc

Acceptable Range: 50% - 150%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	CRI 1/27/99 6:11 PM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	0	2.81	**0.0**								
Beryllium	313.042	10	10.11	**101.1**								
Cadmium	228.802	10	11.39	**113.9**								
Calcium	317.933	0	0.2	**0.0**								
Copper	324.754	50	52.73	**105.5**								
Iron	259.94	100	0	**0.0**								
Magnesium	279.079	0	0.78	**0.0**								
Potassium	766.491	0	-170.03	**0.0**								
Sodium	330.223	0	557.08	**0.0**								
Zinc	213.856	40	40.61	**101.5**								

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: 0127h.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	ICB 1/27/99 10:02 PM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Aluminum	308.215	100	100	U								
Beryllium	313.042	2	2	U								
Cadmium	228.802	5	5	U								
Calcium	317.933	200	200	U								
Copper	324.754	20	10	U								
Iron	259.94	100	100	U								
Magnesium	279.079	200	200	U								
Potassium	766.491	5000	5000	U								
Sodium	330.223	5000	5000	U								
Zinc	213.856	20	20	U								

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: 990127a.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	ICB 1/27/99 6:08 PM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Aluminum	308.215	100	100	U								
Beryllium	313.042	2	2	U								
Cadmium	228.802	5	5	U								
Calcium	317.933	200	200	U								
Copper	324.754	20	10	U								
Iron	259.94	100	100	U								
Magnesium	279.079	200	200	U								
Potassium	766.491	5000	5000	U								
Sodium	330.223	5000	5000	U								
Zinc	213.856	20	20	U								

Quanterra, Inc.

Metals Data Reporting Form

Initial Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 020499R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 2 2/4/99 8:51 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U								
Arsenic	75	5	5	U								
Barium	135	1	1	U								
Chromium	52	1	1	U								
Cobalt	59	1	1	U								
Lead	208	1	1	U								
Manganese	55	1	1	U								
Nickel	60	1	1	U								
Selenium	82	5	5	U								
Silver	107	1	1	U								
Thallium	205	1	1	U								
Vanadium	51	5	5	U								

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: 0127h.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	CCB1 1/27/99 10:20 PM		CCB2 1/27/99 11:28 PM		CCB3 1/28/99 12:16 AM		CCB4 1/28/99 12:37 AM		CCB5 1/28/99 1:19 AM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Aluminum	308.215	100	100	U	100	U	100	U	100	U	100	U
Beryllium	313.042	2	2	U	2	U	2	U	2	U	2	U
Cadmium	228.802	5	5	U	5	U	5	U	5	U	5	U
Calcium	317.933	200	200	U	200	U	200	U	200	U	200	U
Copper	324.754	20	10	U	10	U	10	U	10	U	10	U
Iron	259.94	100	100	U	100	U	100	U	100	U	100	U
Magnesium	279.079	200	200	U	200	U	200	U	200	U	200	U
Potassium	766.491	5000	5000	U	5000	U	5000	U	5000	U	5000	U
Sodium	330.223	5000	5000	U	5000	U	5000	U	5000	U	5000	U
Zinc	213.856	20	20	U	20	U	20	U	20	U	20	U

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: 0127h.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	CCB6 1/28/99 1:57 AM Found	Q	CCB7 1/28/99 2:32 AM Found	Q	Found	Q	Found	Q	Found	Q
Aluminum	308.215	100	100	U	100	U						
Beryllium	313.042	2	2	U	2	U						
Cadmium	228.802	5	5	U	5	U						
Calcium	317.933	200	200	U	200	U						
Copper	324.754	20	10	U	10	U						
Iron	259.94	100	100	U	100	U						
Magnesium	279.079	200	200	U	200	U						
Potassium	766.491	5000	5000	U	5000	U						
Sodium	330.223	5000	5000	U	5000	U						
Zinc	213.856	20	20	U	20	U						

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICP **Units:** ug/L

Chart Number: 990127a.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	CCB1 1/27/99 6:25 PM Found	Q	CCB2 1/27/99 7:12 PM Found	Q	CCB3 1/27/99 7:54 PM Found	Q	CCB4 1/27/99 8:31 PM Found	Q	CCB5 1/27/99 8:51 PM Found	Q
Aluminum	308.215	100	100	U	100	U	100	U	100	U	100	U
Beryllium	313.042	2	2	U	2	U	2	U	2	U	2	U
Cadmium	228.802	5	5	U	5	U	5	U	5	U	5	U
Calcium	317.933	200	200	U	200	U	200	U	200	U	200	U
Copper	324.754	20	10	U	10	U	10	U	10	U	10	U
Iron	259.94	100	100	U	100	U	100	U	100	U	100	U
Magnesium	279.079	200	200	U	200	U	200	U	200	U	200	U
Potassium	766.491	5000	5000	U	5000	U	5000	U	5000	U	5000	U
Sodium	330.223	5000	5000	U	5000	U	5000	U	5000	U	5000	U
Zinc	213.856	20	20	U	20	U	20	U	20	U	20	U

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 020499R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 5 2/4/99 9:17 AM		QC Std 4 2/4/99 10:20 AM		QC Std 4 2/4/99 11:07 AM		QC Std 4 2/4/99 11:44 AM		QC Std 4 2/4/99 12:11 PM	
			Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U	1	U	1	U	1	U	1	U
Arsenic	75	5	5	U	5	U	5	U	5	U	5	U
Barium	135	1	1	U	1	U	1	U	1	U	1	U
Chromium	52	1	1	U	1	U	1	U	1	U	1	U
Cobalt	59	1	1	U	1	U	1	U	1	U	1	U
Lead	208	1	1	U	1	U	1	U	1	U	1	U
Manganese	55	1	1	U	1	U	1	U	1	U	1	U
Nickel	60	1	1	U	1	U	1	U	1	U	1	U
Selenium	82	5	5	U	5	U	5	U	5	U	5	U
Silver	107	1	1	U	1	U	1	U	1	U	1	U
Thallium	205	1	1	U	1	U	1	U	1	U	1	U
Vanadium	51	5	5	U	5	U	5	U	5	U	5	U

Quanterra, Inc.

Metals Data Reporting Form

Continuing Calibration Blank Results

Instrument: ICPMS **Units:** ug/L

Chart Number: 020499R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	QC Std 4 2/4/99 1:06 PM Found	Q	QC Std 5 2/4/99 2:06 PM Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1	1	U	0							
Arsenic	75	5	5	U	0							
Barium	135	1	1	U	0							
Chromium	52	1	1	U	0							
Cobalt	59	1	1	U	0							
Lead	208	1	1	U	0							
Manganese	55	1	1	U	0							
Nickel	60	1	1	U	0							
Selenium	82	5	5	U	0							
Silver	107	1	1	U	0							
Thallium	205	1	1	U	0							
Vanadium	51	5	5	U	0							

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: D9A130190 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: D9A190000-172 **Prep Batch #...:** 9019172						
Calcium	**14.9 B**	**20.0**	**mg/kg**	**SW846 6010B**	**01/27/99**	**CQ2GN107**
Aluminum	ND	10.0	mg/kg	SW846 6010B	01/27/99	CQ2GN105
Beryllium	ND	0.20	mg/kg	SW846 6010B	01/27/99	CQ2GN106
Cadmium	ND	0.50	mg/kg	SW846 6010B	01/27/99	CQ2GN108
Copper	ND	2.0	mg/kg	SW846 6010B	01/27/99	CQ2GN109
Iron	**1.4 B**	**10.0**	**mg/kg**	**SW846 6010B**	**01/27/99**	**CQ2GN10A**
Potassium	ND	500	mg/kg	SW846 6010B	01/27/99	CQ2GN101
Magnesium	ND	20.0	mg/kg	SW846 6010B	01/27/99	CQ2GN102
Sodium	ND	500	mg/kg	SW846 6010B	01/27/99	CQ2GN103
Zinc	ND	2.0	mg/kg	SW846 6010B	01/27/99	CQ2GN104
MB Lot-Sample #: D9A190000-177 **Prep Batch #...:** 9019177						
Silver	ND	0.10	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM101
Arsenic	**0.0084 B**	**1.0**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM102**
Barium	**0.058 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM103**
Cobalt	ND	0.10	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM104
Chromium	ND	0.10	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM105
Manganese	ND	0.10	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM106
Nickel	**0.031 B**	**0.10**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM107**
Lead	**0.021 B**	**5.0**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM108**
Antimony	**0.010 B**	**6.0**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM109**
Selenium	ND	0.50	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM10A
Thallium	ND	1.0	mg/kg	SW846 6020	01/27-02/04/99	CQ2HM10C
Vanadium	**0.0078 B**	**0.50**	**mg/kg**	**SW846 6020**	**01/27-02/04/99**	**CQ2HM10D**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

FORM 3
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICP **Units:** ug/L

Chart Number: 0127h.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	True Conc	ICSA 1/27/99 10:09 PM		ICSA 1/28/99 2:22 AM					
				Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Aluminum	308.215		500000	482000		495000							
Beryllium	313.042	2		2	U	2	U						
Cadmium	228.802	5		5	U	5	U						
Calcium	317.933		500000	465000		476000							
Copper	324.754	20		10	U	10	U						
Iron	259.94		200000	178000		181000							
Magnesium	279.079		500000	515000		531000							
Potassium	766.491	5000		5000	U	5000	U						
Sodium	330.223	5000		5000	U	5000	U						
Zinc	213.856	20		20	U	20	U						

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICP **Units:** ug/L

Chart Number: 990127a.arc

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	True Conc	ICSA 1/27/99 6:14 PM Found	Q	ICSA 1/27/99 8:09 PM Found	Q	ICSA 1/27/99 8:41 PM Found	Q	Found	Q	Found	Q
Aluminum	308.215		500000	485000		488000		486000					
Beryllium	313.042	2		2	U	2	U	2	U				
Cadmium	228.802	5		5	U	5	U	5	U				
Calcium	317.933		500000	472000		480000		475000					
Copper	324.754	20		10	U	10	U	10	U				
Iron	259.94		200000	180000		181000		179000					
Magnesium	279.079		500000	521000		527000		524000					
Potassium	766.491	5000		5000	U	5000	U	5000	U				
Sodium	330.223	5000		5000	U	5000	U	5000	U				
Zinc	213.856	20		20	U	20	U	20	U				

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard A

Instrument: ICPMS **Units:** ug/L

Chart Number: 020499R.rep

Standard Source: **Standard ID:**

Element	WL/ Mass	Report Limit	True Conc	ICSA 2/4/99 8:57 AM Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Antimony	121	1		1.8									
Arsenic	75	5		5	U								
Barium	135	1		1	U								
Chromium	52	1		9.8									
Cobalt	59	1		1	U								
Lead	208	1		1.2									
Manganese	55	1		4.4									
Nickel	60	1		3									
Selenium	82	5		5	U								
Silver	107	1		1	U								
Thallium	205	1		1	U								
Vanadium	51	5		5	U								

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICP

Units: ug/L

Chart Number: 0127h.arc

Acceptable Range: 80% - 120%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICSAB 1/27/99 10:13 PM Found	% Rec	ICSAB 1/28/99 2:25 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	500000	466550	**93.3**	461390	**92.3**						
Beryllium	313.042	500	485.65	**97.1**	488.9	**97.8**						
Cadmium	228.802	1000	941.62	**94.2**	975.58	**97.6**						
Calcium	317.933	500000	449080	**89.8**	444550	**88.9**						
Copper	324.754	500	485.33	**97.1**	491.19	**98.2**						
Iron	259.94	200000	172290	**86.1**	169480	**84.7**						
Magnesium	279.079	500000	498130	**99.6**	494480	**98.9**						
Potassium	766.491	50000	48868	**97.7**	50028	**100.1**						
Sodium	330.223	50000	48840	**97.7**	49961	**99.9**						
Zinc	213.856	1000	925.64	**92.6**	957.65	**95.8**						

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICP

Units: ug/L

Chart Number: 990127a.arc

Acceptable Range: 80% - 120%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICSAB 1/27/99 6:18 PM Found	% Rec	ICSAB 1/27/99 8:12 PM Found	% Rec	ICSAB 1/27/99 8:44 PM Found	% Rec	Found	% Rec	Found	% Rec
Aluminum	308.215	500000	483440	96.7	486970	97.4	482800	96.6				
Beryllium	313.042	500	487.22	97.4	489	97.8	489.4	97.9				
Cadmium	228.802	1000	958.51	95.9	976.89	97.7	969.42	96.9				
Calcium	317.933	500000	468550	93.7	473490	94.7	473930	94.8				
Copper	324.754	500	485.44	97.1	483.52	96.7	479.91	96.0				
Iron	259.94	200000	178840	89.4	179250	89.6	178830	89.4				
Magnesium	279.079	500000	518390	103.7	524060	104.8	519720	103.9				
Potassium	766.491	50000	48810	97.6	49524	99.0	49133	98.3				
Sodium	330.223	50000	48592	97.2	48642	97.3	48803	97.6				
Zinc	213.856	1000	939.17	93.9	947.5	94.8	950.58	95.1				

Quanterra, Inc.

Metals Data Reporting Form

Interference Check Standard AB

Instrument: ICPMS

Units: ug/L

Chart Number: 020499R.rep

Acceptable Range: 70% - 130%

Standard Source:

Standard ID:

Element	WL/ Mass	True Conc	ICSAB 2/4/99 9:03 AM Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec	Found	% Rec
Antimony	121	100	104.26	**104.3**								
Arsenic	75	100	99.493	**99.5**								
Barium	135	100	99.062	**99.1**								
Chromium	52	100	103.29	**103.3**								
Cobalt	59	100	92.516	**92.5**								
Lead	208	100	94.318	**94.3**								
Manganese	55	100	99.556	**99.6**								
Nickel	60	100	91.327	**91.3**								
Selenium	82	100	100.64	**100.6**								
Silver	107	100	92.917	**92.9**								
Thallium	205	100	93.456	**93.5**								
Vanadium	51	100	93.799	**93.8**								

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D9A130190 **Matrix.....:** WG
Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130190-001 **Prep Batch #...:** 9019172								
Calcium	4710	5000	9530	mg/kg	96	SW846 6010B	01/27-01/28/99	CPXA1112
Aluminum	8470	200	12600	mg/kg		SW846 6010B	01/27-01/28/99	CPXA1110
			Qualifiers: NC,MSB					
Beryllium	0.56	5.00	5.81	mg/kg	105	SW846 6010B	01/27-01/28/99	CPXA1111
Cadmium	3.3	5.00	8.03	mg/kg	94	SW846 6010B	01/27-01/28/99	CPXA1113
Copper	27.0	25.0	52.6	mg/kg	102	SW846 6010B	01/27-01/28/99	CPXA1114
Iron	14900	100	15400	mg/kg		SW846 6010B	01/27-01/28/99	CPXA1115
			Qualifiers: NC,MSB					
Potassium	2800	5000	8170	mg/kg	107	SW846 6010B	01/27-01/28/99	CPXA110U
Magnesium	2240	5000	7610	mg/kg	108	SW846 6010B	01/27-01/28/99	CPXA110V
Sodium	208	5000	5250	mg/kg	101	SW846 6010B	01/27-01/28/99	CPXA110W
Zinc	304	50.0	335	mg/kg		SW846 6010B	01/27-01/28/99	CPXA110X
			Qualifiers: NC,MSB					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: D9A130190 **Matrix.....:** WG
Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130190-002 **Prep Batch #...:** 9019177								
Silver	0.99	20.0	11.9 N	mg/kg	55	SW846 6020	01/27-02/04/99	CPXA310U
Arsenic	248	20.0	266	mg/kg		SW846 6020	01/27-02/04/99	CPXA310V
			Qualifiers: NC,MSB					
Barium	124	20.0	143	mg/kg		SW846 6020	01/27-02/04/99	CPXA310W
			Qualifiers: NC,MSB					
Cobalt	10.6	20.0	27.9	mg/kg	87	SW846 6020	01/27-02/04/99	CPXA310X
Chromium	13.9	20.0	30.6	mg/kg	84	SW846 6020	01/27-02/04/99	CPXA3110
Manganese	216	20.0	238	mg/kg		SW846 6020	01/27-02/04/99	CPXA3111
			Qualifiers: NC,MSB					
Nickel	5.9	20.0	23.0	mg/kg	85	SW846 6020	01/27-02/04/99	CPXA3112
Lead	176	20.0	198	mg/kg		SW846 6020	01/27-02/04/99	CPXA3113
			Qualifiers: NC,MSB					
Antimony	0.43	20.0	2.67 N	mg/kg	11	SW846 6020	01/27-02/04/99	CPXA3114
Selenium	0.74	20.0	18.5	mg/kg	89	SW846 6020	01/27-02/04/99	CPXA3115
Thallium	0.26	20.0	16.0	mg/kg	79	SW846 6020	01/27-02/04/99	CPXA3116
Vanadium	12.1	20.0	28.3	mg/kg	81	SW846 6020	01/27-02/04/99	CPXA3117

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

FORM 5A
Equivalent

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D9A130190 **Matrix.....:** WG
Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130190-001		**Prep Batch #...:** 9019172			
Calcium	96	(85 - 114)	SW846 6010B	01/27-01/28/99	CPXA1112
Aluminum	NC,MSB	(88 - 120)	SW846 6010B	01/27-01/28/99	CPXA1110
Beryllium	105	(78 - 118)	SW846 6010B	01/27-01/28/99	CPXA1111
Cadmium	94	(80 - 120)	SW846 6010B	01/27-01/28/99	CPXA1113
Copper	102	(84 - 115)	SW846 6010B	01/27-01/28/99	CPXA1114
Iron	NC,MSB	(87 - 117)	SW846 6010B	01/27-01/28/99	CPXA1115
Potassium	107	(82 - 110)	SW846 6010B	01/27-01/28/99	CPXA110U
Magnesium	108	(84 - 113)	SW846 6010B	01/27-01/28/99	CPXA110V
Sodium	101	(85 - 117)	SW846 6010B	01/27-01/28/99	CPXA110W
Zinc	NC,MSB	(80 - 120)	SW846 6010B	01/27-01/28/99	CPXA110X

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

FORM 5A
Equivalent

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: D9A130190 **Matrix.....:** WG
Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: D9A130190-002		**Prep Batch #...:** 9019177			
Silver	55 N	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA310U
Arsenic	NC,MSB	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA310V
Barium	NC,MSB	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA310W
Cobalt	87	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA310X
Chromium	84	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3110
Manganese	NC,MSB	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3111
Nickel	85	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3112
Lead	NC,MSB	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3113
Antimony	11 N	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3114
Selenium	89	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3115
Thallium	79	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3116
Vanadium	81	(70 - 130)	SW846 6020	01/27-02/04/99	CPXA3117

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

FORM 5A
Equivalent

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: D9A130190 **Work Order #...:** CPXA1-SMP CPXA1-DUP **Matrix.....:** WG

Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Calcium						SD Lot-Sample #: D9A130190-001		
	4710	4940	mg/kg	4.8	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Aluminum						SD Lot-Sample #: D9A130190-001		
	8470	9010	mg/kg	6.2	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Beryllium						SD Lot-Sample #: D9A130190-001		
	0.56	0.56	mg/kg	0.10	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Cadmium						SD Lot-Sample #: D9A130190-001		
	3.3	3.5	mg/kg	4.7	(0-16)	SW846 6010B	01/27-01/28/99	9019172
Copper						SD Lot-Sample #: D9A130190-001		
	27.0	29.3	mg/kg	8.4	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Iron						SD Lot-Sample #: D9A130190-001		
	14900	15600	mg/kg	4.7	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Potassium						SD Lot-Sample #: D9A130190-001		
	2800	2980	mg/kg	6.2	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Magnesium						SD Lot-Sample #: D9A130190-001		
	2240	2380	mg/kg	6.2	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Sodium						SD Lot-Sample #: D9A130190-001		
	208 B	185	mg/kg	12	(0-10)	SW846 6010B	01/27-01/28/99	9019172
Zinc						SD Lot-Sample #: D9A130190-001		
	304	316	mg/kg	3.9	(0-10)	SW846 6010B	01/27-01/28/99	9019172

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: D9A130190 **Work Order #...:** CPXA3-SMP CPXA3-DUP **Matrix.....:** WG

Date Sampled...: 01/11/99 **Date Received..:** 01/12/99

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Silver						SD Lot-Sample #: D9A130190-002		
	0.99	0.99	mg/kg	0.58	(0-20)	SW846 6020	01/27-02/04/99	9019177
Arsenic						SD Lot-Sample #: D9A130190-002		
	248	258	mg/kg	3.8	(0-20)	SW846 6020	01/27-02/04/99	9019177
Barium						SD Lot-Sample #: D9A130190-002		
	124	124	mg/kg	0.40	(0-20)	SW846 6020	01/27-02/04/99	9019177
Cobalt						SD Lot-Sample #: D9A130190-002		
	10.6	11.2	mg/kg	5.3	(0-20)	SW846 6020	01/27-02/04/99	9019177
Chromium						SD Lot-Sample #: D9A130190-002		
	13.9	14.2	mg/kg	2.7	(0-20)	SW846 6020	01/27-02/04/99	9019177
Manganese						SD Lot-Sample #: D9A130190-002		
	216	224	mg/kg	3.7	(0-20)	SW846 6020	01/27-02/04/99	9019177
Nickel						SD Lot-Sample #: D9A130190-002		
	5.9	6.3	mg/kg	5.7	(0-20)	SW846 6020	01/27-02/04/99	9019177
Lead						SD Lot-Sample #: D9A130190-002		
	176	182	mg/kg	3.1	(0-20)	SW846 6020	01/27-02/04/99	9019177
Antimony						SD Lot-Sample #: D9A130190-002		
	0.43 B	0.48	mg/kg	11	(0-20)	SW846 6020	01/27-02/04/99	9019177
Selenium						SD Lot-Sample #: D9A130190-002		
	0.74	0.76	mg/kg	1.8	(0-20)	SW846 6020	01/27-02/04/99	9019177
Thallium						SD Lot-Sample #: D9A130190-002		
	0.26 B	0.27	mg/kg	1.3	(0-20)	SW846 6020	01/27-02/04/99	9019177
Vanadium						SD Lot-Sample #: D9A130190-002		
	12.1	12.7	mg/kg	4.5	(0-20)	SW846 6020	01/27-02/04/99	9019177

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D9A130190 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Aluminum	200	192	mg/kg	96		SW846 6010B	01/27/99	9019172
	200	194	mg/kg	97	0.92	SW846 6010B	01/27/99	9019172
Beryllium	5.00	5.13	mg/kg	103		SW846 6010B	01/27/99	9019172
	5.00	5.11	mg/kg	102	0.37	SW846 6010B	01/27/99	9019172
Cadmium	5.00	5.43	mg/kg	109		SW846 6010B	01/27/99	9019172
	5.00	5.12	mg/kg	102	5.9	SW846 6010B	01/27/99	9019172
Calcium	5000	4800	mg/kg	96		SW846 6010B	01/27/99	9019172
	5000	4800	mg/kg	96	0.03	SW846 6010B	01/27/99	9019172
Copper	25.0	24.4	mg/kg	98		SW846 6010B	01/27/99	9019172
	25.0	24.7	mg/kg	99	1.1	SW846 6010B	01/27/99	9019172
Iron	100	97.7	mg/kg	98		SW846 6010B	01/27/99	9019172
	100	98.3	mg/kg	98	0.53	SW846 6010B	01/27/99	9019172
Magnesium	5000	5020	mg/kg	100		SW846 6010B	01/27/99	9019172
	5000	5020	mg/kg	100	0.01	SW846 6010B	01/27/99	9019172
Potassium	5000	4770	mg/kg	95		SW846 6010B	01/27/99	9019172
	5000	4820	mg/kg	96	1.1	SW846 6010B	01/27/99	9019172
Sodium	5000	4930	mg/kg	99		SW846 6010B	01/27/99	9019172
	5000	4990	mg/kg	100	1.3	SW846 6010B	01/27/99	9019172
Zinc	50.0	47.8	mg/kg	96		SW846 6010B	01/27/99	9019172
	50.0	48.0	mg/kg	96	0.28	SW846 6010B	01/27/99	9019172
Antimony	20.0	19.5	mg/kg	97		SW846 6020	01/27-02/04/99	9019177
	20.0	18.9	mg/kg	95	2.8	SW846 6020	01/27-02/04/99	9019177
Arsenic	20.0	19.4	mg/kg	97		SW846 6020	01/27-02/04/99	9019177
	20.0	18.9	mg/kg	95	2.3	SW846 6020	01/27-02/04/99	9019177
Barium	20.0	18.6	mg/kg	93		SW846 6020	01/27-02/04/99	9019177
	20.0	18.5	mg/kg	92	0.74	SW846 6020	01/27-02/04/99	9019177
Chromium	20.0	18.3	mg/kg	92		SW846 6020	01/27-02/04/99	9019177
	20.0	18.1	mg/kg	91	1.1	SW846 6020	01/27-02/04/99	9019177
Cobalt	20.0	17.7	mg/kg	88		SW846 6020	01/27-02/04/99	9019177
	20.0	18.3	mg/kg	91	3.4	SW846 6020	01/27-02/04/99	9019177
Lead	20.0	18.5	mg/kg	92		SW846 6020	01/27-02/04/99	9019177
	20.0	18.3	mg/kg	92	0.82	SW846 6020	01/27-02/04/99	9019177
Manganese	20.0	18.2	mg/kg	91		SW846 6020	01/27-02/04/99	9019177
	20.0	18.5	mg/kg	93	1.7	SW846 6020	01/27-02/04/99	9019177
Nickel	20.0	17.6	mg/kg	88		SW846 6020	01/27-02/04/99	9019177
	20.0	17.8	mg/kg	89	1.3	SW846 6020	01/27-02/04/99	9019177
Selenium	20.0	19.9	mg/kg	99		SW846 6020	01/27-02/04/99	9019177
	20.0	19.4	mg/kg	97	2.4	SW846 6020	01/27-02/04/99	9019177
Silver	20.0	18.9	mg/kg	95		SW846 6020	01/27-02/04/99	9019177
	20.0	17.8	mg/kg	89	6.4	SW846 6020	01/27-02/04/99	9019177

(Continued on next page)

FORM 7
Equivalent

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Lot-Sample #...: D9A130190 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Thallium	20.0	18.3	mg/kg	92		SW846 6020	01/27-02/04/99	9019177
	20.0	18.2	mg/kg	91	0.81	SW846 6020	01/27-02/04/99	9019177
Vanadium	20.0	18.1	mg/kg	91		SW846 6020	01/27-02/04/99	9019177
	20.0	18.2	mg/kg	91	0.61	SW846 6020	01/27-02/04/99	9019177

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D9A130190 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Aluminum	96	(88 - 120)			SW846 6010B	01/27/99	9019172
	97	(88 - 120)	0.92	(0-10)	SW846 6010B	01/27/99	9019172
Beryllium	103	(78 - 118)			SW846 6010B	01/27/99	9019172
	102	(78 - 118)	0.37	(0-10)	SW846 6010B	01/27/99	9019172
Cadmium	109	(80 - 120)			SW846 6010B	01/27/99	9019172
	102	(80 - 120)	5.9	(0-16)	SW846 6010B	01/27/99	9019172
Calcium	96	(85 - 114)			SW846 6010B	01/27/99	9019172
	96	(85 - 114)	0.03	(0-10)	SW846 6010B	01/27/99	9019172
Copper	98	(84 - 115)			SW846 6010B	01/27/99	9019172
	99	(84 - 115)	1.1	(0-10)	SW846 6010B	01/27/99	9019172
Iron	98	(87 - 117)			SW846 6010B	01/27/99	9019172
	98	(87 - 117)	0.53	(0-10)	SW846 6010B	01/27/99	9019172
Magnesium	100	(84 - 113)			SW846 6010B	01/27/99	9019172
	100	(84 - 113)	0.01	(0-10)	SW846 6010B	01/27/99	9019172
Potassium	95	(82 - 110)			SW846 6010B	01/27/99	9019172
	96	(82 - 110)	1.1	(0-10)	SW846 6010B	01/27/99	9019172
Sodium	99	(85 - 117)			SW846 6010B	01/27/99	9019172
	100	(85 - 117)	1.3	(0-10)	SW846 6010B	01/27/99	9019172
Zinc	96	(80 - 120)			SW846 6010B	01/27/99	9019172
	96	(80 - 120)	0.28	(0-10)	SW846 6010B	01/27/99	9019172
Antimony	97	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	95	(70 - 130)	2.8	(0-20)	SW846 6020	01/27-02/04/99	9019177
Arsenic	97	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	95	(70 - 130)	2.3	(0-20)	SW846 6020	01/27-02/04/99	9019177
Barium	93	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	92	(70 - 130)	0.74	(0-20)	SW846 6020	01/27-02/04/99	9019177
Chromium	92	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	91	(70 - 130)	1.1	(0-20)	SW846 6020	01/27-02/04/99	9019177
Cobalt	88	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	91	(70 - 130)	3.4	(0-20)	SW846 6020	01/27-02/04/99	9019177
Lead	92	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	92	(70 - 130)	0.82	(0-20)	SW846 6020	01/27-02/04/99	9019177
Manganese	91	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	93	(70 - 130)	1.7	(0-20)	SW846 6020	01/27-02/04/99	9019177
Nickel	88	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	89	(70 - 130)	1.3	(0-20)	SW846 6020	01/27-02/04/99	9019177
Selenium	99	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	97	(70 - 130)	2.4	(0-20)	SW846 6020	01/27-02/04/99	9019177
Silver	95	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	89	(70 - 130)	6.4	(0-20)	SW846 6020	01/27-02/04/99	9019177

(Continued on next page)

FORM 7
Equivalent

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: D9A130190 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Thallium	92	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	91	(70 - 130)	0.81	(0-20)	SW846 6020	01/27-02/04/99	9019177
Vanadium	91	(70 - 130)			SW846 6020	01/27-02/04/99	9019177
	91	(70 - 130)	0.61	(0-20)	SW846 6020	01/27-02/04/99	9019177

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM 7
Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Serial Dilution RPD Report

Serial Dilution Sample ID: CPAX1P SERDIL

Original Sample ID: CPAX1 **Client ID:** ND-98-1882

Matrix: Solid **Units:** ug/L **Prep Date:** 1/27/99 **Prep Batch:** 9019172

Weight: 1 **Volume:** 100 **Percent Moisture:**

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Aluminum	308.215	8470000		9030000		6.6 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Beryllium	313.042	564		325	U		1	5	ICP	1/27/99	20:37	1/27/99	20:05
Cadmium	228.802	3340		3130			1	5	ICP	1/27/99	20:37	1/27/99	20:05
Calcium	317.933	4710000		5090000		8.0 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Copper	324.754	27000		29300		8.8 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Iron	259.94	14900000		16300000		9.1 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Magnesium	279.079	2240000		2420000		8.2 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Potassium	766.491	2800000		2920000		4.1 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05
Sodium	330.223	500000	U	135000	U		1	5	ICP	1/27/99	20:37	1/27/99	20:05
Zinc	213.856	304000		337000	*	11.0 %	1	5	ICP	1/27/99	20:37	1/27/99	20:05

Comments:

Version 1.60

* Duplicate analysis RPD was not within limits

Form 9 Equivalent

Quanterra, Inc.

Metals Data Reporting Form

Serial Dilution RPD Report

Serial Dilution Sample ID: CPXA3 L

Original Sample ID: CPXA3 **Client ID:** ND-98-1904

Matrix: Solid **Units:** ug/L **Prep Date:** 1/27/99 **Prep Batch:** 9019177

Weight: 1 **Volume:** 100 **Percent Moisture:**

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Antimony	121	500	U	2500	U		5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Arsenic	75	248000		254000		2.5%	5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Barium	135	131000		136000		3.9%	5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Chromium	52	13900		15700			5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Cobalt	59	10600		12300			5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Lead	208	176000		185000		4.9%	5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Manganese	55	216000		226000		4.7%	5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Nickel	60	5920		6990			5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Selenium	82	2500	U	12500	U		5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Silver	107	1020		2500	U		5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Thallium	205	500	U	2500	U		5	25	ICPMS	2/4/99	12:25	2/4/99	12:30
Vanadium	51	12100		13200			5	25	ICPMS	2/4/99	12:25	2/4/99	12:30

Comments:

* Duplicate analysis RPD was not within limits

Quanterra, Inc.

Metals Data Reporting Form

Instrument Detection Limits

Instrument: ICP **Units:** ug/L

Element	Wavelength /Mass	Reporting Limit	IDL	Date of IDL
Aluminum	308.21	100	100	3/14/98
Beryllium	313.04	2	2	3/14/98
Cadmium	228.80	5	5	3/25/98
Calcium	317.93	200	6.1	3/14/98
Copper	324.75	20	10	3/14/98
Iron	259.94	100	100	3/14/98
Magnesium	279.08	200	18.1	3/14/98
Potassium	766.49	5000	5000	3/14/98
Sodium	330.22	5000	5000	3/14/98
Zinc	213.86	20	20	3/14/98

Quanterra, Inc.

Metals Data Reporting Form

Instrument Detection Limits

Instrument: ICPMS **Units:** ug/L

Element	Wavelength /Mass	Reporting Limit	IDL	Date of IDL
Antimony	121.00	1	0.1705	12/11/98
Arsenic	75.00	5	0.0818	12/11/98
Barium	135.00	1	0.0127	12/11/98
Chromium	52.00	1	0.06	12/11/98
Cobolt	59.00	1	0.0025	12/11/98
Lead	208.00	3	0.0356	12/11/98
Manganese	55.00	1	0.0123	12/11/98
Nickel	60.00	1	0.0669	12/11/98
Selenium	82.00	5	0.2602	12/11/98
Silver	107.00	1	0.0113	12/11/98
Thallium	205.00	1	0.004	12/11/98
Vanadium	51.00	5	0.029	12/11/98

Quanterra, Inc.

Metals Data Reporting Form

Inter-Element Correction Factors

Instrument: ICP **Date of IEC's:**

Interfering Element	Wavelength /Mass	Correction Factor(s)
Aluminum	308.215	As(0.005206), Ca(0.000121), Fe(0.00001), Mg(0.00007), Mn(0.000016), Pb(0.00074), Sn(-0.00003)
Antimony	206.838	Fe(0.00014), Ni(-0.000958), Pb(-0.00092), Sn(-0.00379)
Arsenic	193.696	Cd(0.00576)
Barium	493.409	Co(0.000548)
Beryllium	313.042	Cd(0.00469)
Cadmium	228.802	Co(0.00077)
Calcium	317.933	Cr(-0.00001)
Chromium	267.716	As(0.00125), Co(0.000124), Fe(0.00012), Pb(0.00002), Sb(0.0094), Ti(0.000271), V(0.00256)
Cobolt	228.616	Al(-0.0136), B(0.0022), Cd(0.000723), Cu(-0.000123), Fe(0.00009), Ni(0.000526), Pb(-0.0191), Sb(-0.00033), Se(0.0027)
Copper	324.754	Fe(0.00215), Mg(-0.00002), Zn(0.0042)
Iron	259.94	Ag(-0.000353), As(0.00042), B(-0.000107), Ca(0.000029), Cd(0.000017), Co(0.00005), Cu(-0.000159), Mg(0.000159), Mn(-0.000036), Mo(-0.00015), Na(-0.00175), Ni(-0.000016), Pb(0.000285), Sn(-0.000111), Tl(0.000577), V(0.000013), Zn(0.000114)
Magnesium	279.079	Al(0.000026), As(-0.000517), B(-0.000026), Cd(0.000004), Fe(0.000069), Mo(-0.000048), Pb(0.000027), Sb(0.000057), Sn(0.000151), Tl(0.00028), V(0.000004), Zn(0.000019)
Manganese	257.61	Ag(0.000156), Al(0.00043), Cr(0.00011), Fe(-0.00024), Mg(-0.0068), V(-0.00015)
Molybdenum	202.03	Al(0.00876), As(0.00114), B(-0.00041), Be(-0.000056), Co(0.00012), Cr(-0.000224), Cu(0.000479), Mg(-0.0141), Mn(-0.000291), Sb(0.00095), V(-0.0195), Zn(-0.000112)
Nickel	231.604	Cd(0.00017), Co(0.000526), Mo(-0.000057), Pb(0.000596), Sb(-0.00176), Zn(0.00373)
Tin	189.989	Sb(-0.0058)
Titanium	334.941	Ag(-0.000662), Al(0.00395), Be(0.000026), Co(0.00179), Cu(0.00039), Fe(-0.0029), Mg(-0.0026), Na(-0.743), Pb(0.000679), Sb(0.00191), Sn(0.00271), Tl(-0.0433), V(0.000342)

Quanterra, Inc.

Metals Data Reporting Form

Inter-Element Correction Factors

Instrument: ICP **Date of IEC's:**

Vanadium	292.402	Al(-0.0124), As(0.0123), Be(0.00451), Cd(0.000135), Cr(0.00059), Fe(0.000177), Mn(-0.00015), Sb(-0.00859), Tl(-0.0252)
Zinc	213.856	Na(0.554)

Quanterra, Inc.

Metals Data Reporting Form

Linear Dynamic Ranges

Instrument: ICP **Units:** ug/L

Element	Wavelength /Mass	Linear Range	Date of Linear Range
Aluminum	308.21	1000000	4/15/98
Beryllium	313.04	50000	4/15/98
Cadmium	228.80	100000	4/15/98
Calcium	317.93	1000000	4/15/98
Copper	324.75	100000	4/15/98
Iron	259.94	500000	4/15/98
Magnesium	279.08	1000000	4/15/98
Potassium	766.49	500000	4/15/98
Sodium	330.22	2000000	4/15/98
Zinc	213.86	100000	4/15/98

Quanterra, Inc.

Metals Data Reporting Form

Linear Dynamic Ranges

Instrument: ICPMS **Units:** ug/L

Element	Wavelength /Mass	Linear Range	Date of Linear Range
Antimony	121.00	2000	2/15/98
Arsenic	75.00	1000	2/15/98
Barium	135.00	2000	2/15/98
Chromium	52.00	1000	2/15/98
Cobolt	59.00	1000	2/15/98
Lead	208.00	500	2/15/98
Manganese	55.00	10000	2/15/98
Nickel	60.00	500	2/15/98
Selenium	82.00	2000	2/15/98
Silver	107.00	200	2/15/98
Thallium	205.00	2000	2/15/98
Vanadium	51.00	500	2/15/98

Quanterra, Inc.

Metals Data Reporting Form

Preparation Log

Preparation Batch: 9019172 **Matrix:** Solid

Sample ID	Prep Date	Weight (g)	Volume (ml)	% Moisture
CQ2GNB	1/27/99	1	100	
CQ2GNC	1/27/99	1	100	
CQ2GNL	1/27/99	1	100	
CPXA1	1/27/99	1	100	
CPXA3	1/27/99	1	100	
CPXA5	1/27/99	1	100	
CPXA6	1/27/99	1	100	
CPXA7	1/27/99	1	100	
CPXA8	1/27/99	1	100	
CPXA9	1/27/99	1	100	
CPXAA	1/27/99	1	100	
CPXAC	1/27/99	1	100	
CPXAD	1/27/99	1	100	
CPXAE	1/27/99	1	100	
CPXAF	1/27/99	1	100	
CPXAG	1/27/99	1	100	
CPXAH	1/27/99	1	100	
CPXAJ	1/27/99	1	100	

Quanterra, Inc.

Metals Data Reporting Form

Preparation Log

Preparation Batch: 9019177 **Matrix:** Solid

Sample ID	Prep Date	Weight (g)	Volume (ml)	% Moisture
CQ2HMB	1/27/99	1	100	
CQ2HMC	1/27/99	1	100	
CQ2HML	1/27/99	1	100	
CPXA1	1/27/99	1	100	
CPXA3	1/27/99	1	100	
CPXA5	1/27/99	1	100	
CPXA6	1/27/99	1	100	
CPXA7	1/27/99	1	100	
CPXA8	1/27/99	1	100	
CPXA9	1/27/99	1	100	
CPXAA	1/27/99	1	100	
CPXAC	1/27/99	1	100	
CPXAD	1/27/99	1	100	
CPXAE	1/27/99	1	100	
CPXAF	1/27/99	1	100	
CPXAG	1/27/99	1	100	
CPXAH	1/27/99	1	100	
CPXAJ	1/27/99	1	100	

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICP

Chart Number: 0127h.arc

Sample Name	Date of Analysis	Time of Analysis
CAL BLK	1/27/99	9:48 PM
CAL STD	1/27/99	9:52 PM
CAL STD	1/27/99	9:55 PM
ICV	1/27/99	9:59 PM
ICB	1/27/99	10:02 PM
CRI	1/27/99	10:06 PM
ICSA	1/27/99	10:09 PM
ICSAB	1/27/99	10:13 PM
CCV1	1/27/99	10:16 PM
CCB1	1/27/99	10:20 PM
CPTVEB SOIL	1/27/99	10:53 PM
CPTVEC SOIL	1/27/99	10:56 PM
CPTVEL SOIL	1/27/99	11:00 PM
CPTD8	1/27/99	11:03 PM
CPTEF	1/27/99	11:07 PM
CPTEJ	1/27/99	11:10 PM
CPTEJP SERDI	1/27/99	11:14 PM
CPTEJS MS	1/27/99	11:17 PM
CPTEJD SD	1/27/99	11:21 PM
CCV2	1/27/99	11:24 PM
CCB2	1/27/99	11:28 PM
CPTEN	1/27/99	11:31 PM
CPTEP	1/27/99	11:35 PM
CPTER	1/27/99	11:39 PM
CPTET	1/27/99	11:42 PM
CPTEV	1/27/99	11:46 PM
CPTEW	1/27/99	11:49 PM
CPTEX	1/27/99	11:53 PM
CPTEXS MS	1/28/99	12:02 AM
CPTEXD SD	1/28/99	12:05 AM
CPTF1	1/28/99	12:09 AM
CCV3	1/28/99	12:12 AM
CCB3	1/28/99	12:16 AM
CPTF2	1/28/99	12:19 AM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICP

Chart Number: 0127h.arc

Sample Name	Date of Analysis	Time of Analysis
CPTF3	1/28/99	12:23 AM
CPTFE	1/28/99	12:26 AM
CPTFG	1/28/99	12:30 AM
CCV4	1/28/99	12:33 AM
CCB4	1/28/99	12:37 AM
CQ7RTB 38-S	1/28/99	12:40 AM
CQ8RKC 38-S	1/28/99	12:44 AM
CQ8RKL 38-S	1/28/99	12:48 AM
CNA66	1/28/99	12:51 AM
CNA66P SERDI	1/28/99	12:55 AM
CNA66S MS	1/28/99	12:58 AM
CNA66D SD	1/28/99	1:02 AM
CNA68	1/28/99	1:05 AM
CCV69	1/28/99	1:09 AM
CNA6A	1/28/99	1:12 AM
CCV5	1/28/99	1:15 AM
CCB5	1/28/99	1:19 AM
CNA6C	1/28/99	1:22 AM
CNA6D	1/28/99	1:26 AM
CNA6E	1/28/99	1:30 AM
CNA6F	1/28/99	1:33 AM
CNAAD	1/28/99	1:37 AM
CNAAE	1/28/99	1:50 AM
CCV6	1/28/99	1:54 AM
CCB6	1/28/99	1:57 AM
CPXA1	1/28/99	2:01 AM
CPXA1S MS	1/28/99	2:04 AM
CPXA1X DUP	1/28/99	2:08 AM
CPXA1PDS	1/28/99	2:11 AM
CPXAG 5X Fe HIG	1/28/99	2:15 AM
CPXAH 2X FOR Z	1/28/99	2:18 AM
ICSA	1/28/99	2:22 AM
ICSAB	1/28/99	2:25 AM
CCV7	1/28/99	2:29 AM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICP

Chart Number: 0127h.arc

Sample Name	Date of Analysis	Time of Analysis
CCB7	1/28/99	2:32 AM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICP

Chart Number: 990127a.arc

Sample Name	Date of Analysis	Time of Analysis
CAL BLK	1/27/99	5:49 PM
CAL BLK	1/27/99	5:54 PM
CAL STD	1/27/99	5:57 PM
CAL STD	1/27/99	6:01 PM
ICV	1/27/99	6:04 PM
ICB	1/27/99	6:08 PM
CRI	1/27/99	6:11 PM
ICSA	1/27/99	6:14 PM
ICSAB	1/27/99	6:18 PM
CCV1	1/27/99	6:22 PM
CCB1	1/27/99	6:25 PM
CQ2GNB SOI	1/27/99	6:32 PM
CQ2GNC SOI	1/27/99	6:37 PM
CQ2GNL SOI	1/27/99	6:40 PM
CPAX1	1/27/99	6:44 PM
CPAX1P SERDI	1/27/99	6:47 PM
CPAX1S MS	1/27/99	6:51 PM
CPAX1X DUP	1/27/99	6:54 PM
CPAX3	1/27/99	6:58 PM
CPAX5	1/27/99	7:01 PM
CPAX6	1/27/99	7:05 PM
CCV2	1/27/99	7:08 PM
CCB2	1/27/99	7:12 PM
CPAX7	1/27/99	7:15 PM
CPAX8	1/27/99	7:19 PM
CPAX9	1/27/99	7:22 PM
CPAXA	1/27/99	7:26 PM
CPAXC	1/27/99	7:29 PM
CPAXD	1/27/99	7:33 PM
CPAXE	1/27/99	7:37 PM
CPAXF	1/27/99	7:40 PM
CPAXG	1/27/99	7:44 PM
CPAXH	1/27/99	7:47 PM
CCV3	1/27/99	7:51 PM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICP

Chart Number: 990127a.arc

Sample Name	Date of Analysis	Time of Analysis
CCB3	1/27/99	7:54 PM
CPAXJ	1/27/99	8:02 PM
CPAX1P SERDI	1/27/99	8:05 PM
ICSA	1/27/99	8:09 PM
ICSAB	1/27/99	8:12 PM
CPXAJ 2X FOR Z	1/27/99	8:18 PM
CPXAJ 5X FOR Z	1/27/99	8:24 PM
CCV4	1/27/99	8:27 PM
CCB4	1/27/99	8:31 PM
CPAX1	1/27/99	8:37 PM
ICSA	1/27/99	8:41 PM
ICSAB	1/27/99	8:44 PM
CCV5	1/27/99	8:48 PM
CCB5	1/27/99	8:51 PM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICPMS

Chart Number: 020499R.rep

Sample Name	Date of Analysis	Time of Analysis
Blank	2/4/99	8:37 AM
Standard 1	2/4/99	8:42 AM
QC Std 1	2/4/99	8:47 AM
QC Std 2	2/4/99	8:51 AM
ICSA	2/4/99	8:57 AM
ICSA	2/4/99	9:03 AM
BLANK	2/4/99	9:07 AM
QC Std 3	2/4/99	9:12 AM
QC Std 5	2/4/99	9:17 AM
CQ2HMB	2/4/99	9:30 AM
CQ2HMC	2/4/99	9:34 AM
CQ2HML	2/4/99	9:39 AM
CPXA1	2/4/99	9:43 AM
CPXA3	2/4/99	9:48 AM
CPXA3 L	2/4/99	9:52 AM
CPXA3 PDS	2/4/99	9:56 AM
CPXA3S	2/4/99	10:01 AM
CPXA3X	2/4/99	10:05 AM
QC Std 3	2/4/99	10:10 AM
QC Std 4	2/4/99	10:15 AM
QC Std 4	2/4/99	10:20 AM
CPXA5	2/4/99	10:25 AM
CPXA6	2/4/99	10:29 AM
CPXA7	2/4/99	10:34 AM
CPXA8	2/4/99	10:38 AM
CPXA9	2/4/99	10:43 AM
CPXAA	2/4/99	10:47 AM
CPXAC	2/4/99	10:52 AM
CPXAD	2/4/99	10:56 AM
QC Std 3	2/4/99	11:01 AM
QC Std 4	2/4/99	11:07 AM
CPXAE	2/4/99	11:11 AM
CPXAF	2/4/99	11:15 AM
CPXAG	2/4/99	11:20 AM

Quanterra, Inc.

Metals Data Reporting Form

Instrument Runlog

Instrument: ICPMS

Chart Number: 020499R.rep

Sample Name	Date of Analysis	Time of Analysis
CPXAH	2/4/99	11:24 AM
CPXAJ	2/4/99	11:29 AM
QC Std 3	2/4/99	11:33 AM
QC Std 4	2/4/99	11:39 AM
QC Std 4	2/4/99	11:44 AM
Blank	2/4/99	11:54 AM
Standard 1	2/4/99	11:59 AM
QC Std 3	2/4/99	12:04 PM
QC Std 4	2/4/99	12:11 PM
CPXA1	2/4/99	12:21 PM
CPXA3	2/4/99	12:25 PM
CPXA3 L	2/4/99	12:30 PM
CPXA3 PDS	2/4/99	12:34 PM
CPXA3S	2/4/99	12:39 PM
CPXA3X	2/4/99	12:43 PM
CPXA5	2/4/99	12:48 PM
CPXA6	2/4/99	12:52 PM
CPXA7	2/4/99	12:57 PM
QC Std 3	2/4/99	1:01 PM
QC Std 4	2/4/99	1:06 PM
CPXA8	2/4/99	1:11 PM
CPXA9	2/4/99	1:16 PM
CPXAA	2/4/99	1:20 PM
CPXAC	2/4/99	1:25 PM
CPXAD	2/4/99	1:29 PM
CPXAE	2/4/99	1:34 PM
CPXAF	2/4/99	1:38 PM
CPXAG	2/4/99	1:43 PM
CPXAH	2/4/99	1:47 PM
CPXAJ	2/4/99	1:52 PM
QC Std 3	2/4/99	1:57 PM
QC Std 5	2/4/99	2:01 PM
QC Std 5	2/4/99	2:06 PM

ANALYTICAL RAW DATA

FOR

ROY F. WESTON

QUANTERRA INCORPORATED

DENVER NO. D9A130190

Description of Supporting Documentation

The enclosed ***Expanded*** raw data package is arranged in the order in which the initial calibration curve, internal quality control samples, and the samples for this lot were analyzed. Also included are any client requested batch quality control samples. When applicable, the data is organized alphabetically by instrument ID, then chronologically by analysis date.

GC/MS

I. Initial Calibration
   A. Run log pages.
   B. Tuning data (summary, bar graph spectrum, and mass listings).
   C. Initial calibration summary (listing response factors, %RSDs), target compound report, internal standard summary, and chromatograms (RIC).

II. Sample Data
   A. Preparation logs (when applicable), run log pages, target compound report, IS summary, and chromatograms (RIC).
   B. Tuning data (summary, bar graph spectrum, and mass listing).
   C. Continuing calibration summary (response factors, %RSDs, and %Ds).
   D. Quality control sample raw data and sample raw data.*

GC

I. Initial Calibration Data
   A. Initial calibration summary, analysis report, and chromatograms for each column used in analysis.

II. Sample Data
   A. Preparation logs (when applicable) and run log pages.
   B. Bracketing continuing calibration standards (when applicable).
   C. Quality control sample raw data and sample raw data.**

Metals

I. Preparation Logs
II. ICP and/or ICP/MS Data
   A. Computer printouts listing all calibrations.
   B. Quality control sample raw data and sample raw data.
III. GFAA and/or CVAA Raw Data
   A. Analysis bench sheets listing all calibrations.
   B. Quality control sample raw data and sample raw data.

Wet Chemistry

I. Preparation Logs
II. Sample Data
   A. Analysis bench sheets listing all calibration.
   B. Quality control sample raw data and sample raw data.

* Raw data includes the target compound report, IS summary, surrogate recovery report, chromatograms (RIC), spectra, and Tentatively Identified Compound (TIC) report with library searches (when applicable).

** Raw data includes the analysis report and chromatograms for each column.

Sample Data

Metals—Supporting Documentation

D9A130190

Roy F. Weston

QUANTERRA-DENVER

ICP IDL -1998-qt 2

ICP-1 Effective 04/15/98

ICP-3 Effective 04/14/98

All units are mg/L

ANALYTE	IDL ICP-1	IDL ICP-3	MDL aqueous	MDL soil	QRL	CRDL	LINEAR RANGE ICP-1	LINEAR RANGE ICP-3
Aluminum	0.0324	0.0128	0.052	3.6	0.1	0.2	600	1000
Antimony	0.0257	0.035	0.02	4.8	0.06	0.06	100	100
Arsenic	0.0393	0.0563	0.027	5	0.1	Trace/GFAA	100	100
Barium	0.00186	0.00056	0.0018	0.57	0.01	0.2	100	100
Beryllium	0.00049	0.0002	0.00092	0.14	0.002	0.005	50	50
Boron	0.0578	0.00475	0.01	1.7	0.1	--	100	100
Cadmium	0.00424	0.00255	0.0034	0.22	0.005	0.005	100	100
Calcium	0.0825	0.0061	0.034	4.8	0.2	5	1000	1000
Chromium	0.00394	0.00276	0.0041	0.38	0.01	0.01	100	100
Cobalt	0.00412	0.00289	0.0035	0.79	0.01	0.05	100	100
Copper	0.0034	0.00199	0.0021	0.87	0.02	0.025	100	100
Iron	0.02	0.00467	0.026	1	0.1	0.1	500	500
Lead	0.0296	0.0264	0.019	3.6	0.05	Trace/GFAA	100	100
Lithium	0.00266	0.00281	0.005	0.5	0.05	--	50	50
Magnesium	0.0395	0.0181	0.07	5.1	0.2	5	1000	1000
Manganese	0.00509	0.00061	0.004	0.37	0.01	0.015	100	100
Molybdenum	0.00903	0.00679	0.0025	0.79	0.02	--	100	100
Nickel	0.00963	0.00838	0.0097	1.3	0.04	0.04	100	100
Phosphorus	0.117	0.0717	0.084	16	0.3	--	200	200
Potassium	0.136	0.339	0.5	50	5	5	500	500
Selenium	0.0674	0.062	0.073	6.7	0.2	Trace/GFAA	100	100
Silica (SiO_2)	0.0552	0.0237	0.16	17	0.5	--	428	428
Silicon	0.0287	0.0118	N/A	N/A	0.1	0.1	200	200
Silver	0.00484	0.00241	0.0025	0.29	0.01	0.01	100	100
Sodium	1.26	0.943	0.72	110	5	5	2000	2000
Strontium	0.0221	0.00273	0.012	1.2	0.05	--	50	50
Thallium	0.0812	0.0758	0.2	20	2	Trace/GFAA	100	100
Tin	0.00832	0.0775	0.01	4.9	0.1	--	100	100
Titanium	0.00201	0.00146	0.0015	0.17	0.015	--	20	100
Vanadium	0.00304	0.00176	0.0031	0.41	0.01	0.05	100	100
Zinc	0.00248	0.00158	0.014	0.68	0.02	0.02	100	100

ICP3 IEC LIST

IEC	WHAT THE IEC AFFECTS
AG	NONE
AL	AS, CA, FE, MG, MN, P, PB, SB
AS	CD
B	NONE
BA	NONE
BE	NONE
CA	CR, P
CD	CU
CO	AL, B, CD, CU, FE, NA, PB, SB, SE
CR	AS, FE, PB, SR, TI, V
CU	MG, P, PB, ZN
FE	AG, AS, B, CA, CD, CO, CU, MG, MN, MO, NA, NI,P, PB, SN, TL,V,ZN
K	NONE
LI	NONE
MG	AL, AS, B, CD, FE, MO, P, PB, SB, SN, V, ZN
MN	AG, AL, CR, FE, MG, V
MO	AL, AS, B, BE, CD, CR, CU, MG, MN, P, SB, SIO2, V
NA	NONE
NI	CD, CO, MO, PB, SB, ZN
P	NONE
PB	NONE
SB	FE, NA, PB, SB
SE	NONE
SIO2	NONE
SN	SB
SR	NONE
TI	AG, AL, BE, CO, CU, FE, MG, NA, PB, SB, SN, TL
TL	NONE
V	AG, AL, AS, B, VE, CD, CR, FE, MN, SB, SIO2, TL
ZN	NA

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:14:52

BATCH NUMBER: 9019172

PREP DATE: 1/27/99
DUE DATE 2/01/99

INITIALS: AG HH

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190 SOLID	CPXA1 TO DUE DATE: 2/01/99	01	X .54 g	____g	____g	____g
	CPXA1S		.54 g	____g	____g	____g
	CPXA1X		.52 g	____g	____g	____g
* D9A130190 SOLID	CPXA3 TO DUE DATE: 2/01/99	01	X .49 g	____g	____g	____g
D9A130190 SOLID	CPXA5 TO DUE DATE: 2/01/99	01	X .97 g	____g	____g	____g
D9A130190 SOLID	CPXA6 TO DUE DATE: 2/01/99	01	X .98 g	____g	____g	____g
* D9A130190 SOLID	CPXA7 TO DUE DATE: 2/01/99	01	X .49 g	____g	____g	____g
D9A130190 SOLID	CPXA8 TO DUE DATE: 2/01/99	01	X .98 g	____g	____g	____g
* D9A130190 SOLID	CPXA9 TO DUE DATE: 2/01/99	01	X .53 g	____g	____g	____g
D9A130190 SOLID	CPXAA TO DUE DATE: 2/01/99	01	X .99 g	____g	____g	____g
* D9A130190 SOLID	CPXAC TO DUE DATE: 2/01/99	01	X .49 g	____g	____g	____g
* D9A130190 SOLID	CPXAD TO DUE DATE: 2/01/99	01	X .53 g	____g	____g	____g
* D9A130190 SOLID	CPXAE TO DUE DATE: 2/01/99	01	X .52 g	____g	____g	____g
* D9A130190 SOLID	CPXAF TO DUE DATE: 2/01/99	01	X .48 g	____g	____g	____g
* D9A130190 SOLID	CPXAG TO DUE DATE: 2/01/99	01	X .53 g	____g	____g	____g
* D9A130190 SOLID	CPXAH TO DUE DATE: 2/01/99	01	X .49 g	____g	____g	____g

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:14:52

BATCH NUMBER: 9019172 PREP DATE: 1/27/99
DUE DATE 2/01/99 INITIALS: AG JJ

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190	CPXAJ	01	X .48 g	_____g	_____g	_____g
SOLID	TO DUE DATE:		2/01/99			
D9A190000	CQ2GNB	01	X 1.00 g	_____g	_____g	_____g
SOLID	DUE DATE:		0/00/00			
	CQ2GNC		1.00 g	_____g	_____g	_____g
	CQ2GNL		1.00 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: * Limited Sample; final vol. brought 50g All others brought to 100g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

AL BE CA CD CU FE KX MG NA ZN

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	____	____

: Instrument Upload Run Log - Page 1 :
: Started Thu Jan 28 06:00:33 1999 by ANDERSOT :
: Data File: UPL$DEN_DATA_ROOT:<TJA>990127A.ASP;1 :

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	CAL	1	27-JAN-1999	17:49:00			002
2	CAL	1	27-JAN-1999	17:54:00			002
3	CAL	1	27-JAN-1999	17:57:00			002
4	CAL	1	27-JAN-1999	18:01:00			002
5	ICV	1	27-JAN-1999	18:04:00			002
6	ICB	1	27-JAN-1999	18:08:00			002
7	CRI	1	27-JAN-1999	18:11:00			002
8	ICSA	1	27-JAN-1999	18:14:00			002
9	ICSAB	1	27-JAN-1999	18:18:00			002
10	CCV1	1	27-JAN-1999	18:22:00			002
11	CCB1	1	27-JAN-1999	18:25:00			002
12	CQ2GNB	1	27-JAN-1999	18:32:00	9019172	D9A190000	002
13	CQ2GNC	1	27-JAN-1999	18:37:00	9019172	D9A190000	002
14	CQ2GNL	1	27-JAN-1999	18:40:00	9019172	D9A190000	002
15	CPXA1	NOT USED	27-JAN-1999	18:44:00	9019172	D9A130190	002
16	CPXA1P	NOT USED	27-JAN-1999	18:47:00			002
17	CPXA1S	NOT USED	27-JAN-1999	18:51:00	9019172	D9A130190	002
18	CPXA1X	NOT USED	27-JAN-1999	18:54:00	9019172	D9A130190	002
19	CPXA3	1	27-JAN-1999	18:58:00	9019172	D9A130190	002
20	CPXA5	1	27-JAN-1999	19:01:00	9019172	D9A130190	002
21	CPXA6	1	27-JAN-1999	19:05:00	9019172	D9A130190	002
22	CCV2	1	27-JAN-1999	19:08:00			002
23	CCB2	1	27-JAN-1999	19:12:00			002
24	CPXA7	1	27-JAN-1999	19:15:00	9019172	D9A130190	002
25	CPXA8	1	27-JAN-1999	19:19:00	9019172	D9A130190	002
26	CPXA9	1	27-JAN-1999	19:22:00	9019172	D9A130190	002
27	CPXAA	1	27-JAN-1999	19:26:00	9019172	D9A130190	002
28	CPXAC	1	27-JAN-1999	19:29:00	9019172	D9A130190	002
29	CPXAD	1	27-JAN-1999	19:33:00	9019172	D9A130190	002
30	CPXAE	1	27-JAN-1999	19:37:00	9019172	D9A130190	002
31	CPXAF	1	27-JAN-1999	19:40:00	9019172	D9A130190	002
32	CPXAG	1	27-JAN-1999	19:44:00	9019172	D9A130190	002
33	CPXAH	1	27-JAN-1999	19:47:00	9019172	D9A130190	002
34	CCV3	1	27-JAN-1999	19:51:00			002
35	CCB3	1	27-JAN-1999	19:54:00			002
36	CPXAJ	1	27-JAN-1999	20:02:00	9019172	D9A130190	002
37	CPXA1P	5	27-JAN-1999	20:05:00			002
38	ICSA	1	27-JAN-1999	20:09:00			002
39	ICSAB	1	27-JAN-1999	20:12:00			002
40	CPXAJ	NOT USED	27-JAN-1999	20:18:00	9019172	D9A130190	002
41	CPXAJ	5 For Ni only	27-JAN-1999	20:24:00	9019172	D9A130190	002
42	CCV4	1	27-JAN-1999	20:27:00			002
43	CCB4	1	27-JAN-1999	20:31:00			002
44	CPXA1	1	27-JAN-1999	20:37:00	9019172	D9A130190	002

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	ICSA	1	27-JAN-1999	20:41:00			002
46	ICSAB	1	27-JAN-1999	20:44:00			002
47	CCV5	1	27-JAN-1999	20:48:00			002
48	CCB5	1	27-JAN-1999	20:51:00			002

End of Report

Standardization Rpt. Wed 01-27-99 05:57:09 PM page 1

Method: ICP3Y Standard: CAL BLK

Elem	Ag	Al	As	B	Ba	Be	Ca
Avge	.00151	.02543	-.00049	-.00038	.00028	-.00245	.30757
SDev	.00017	.00056	.00478	.00043	.00000	.00017	.00141
%RSD	11.331	2.2078	983.39	114.57	.48008	6.8993	.45962
#1	.00141	.02564	.00282	-.00085	.00028	-.00225	.30824
#2	.00141	.02479	.00169	-.00028	.00028	-.00254	.30594
#3	.00170	.02585	-.00597	.00000	.00028	-.00256	.30851

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Avge	.00151	-.00085	.00245	.00066	.00028	.02045	.00009
SDev	.00033	.00102	.00157	.00016	.00000	.00345	.00016
%RSD	21.853	119.89	64.070	24.474	.48008	16.894	173.21
#1	.00113	-.00197	.00141	.00056	.00028	.01860	.00000
#2	.00169	.00000	.00169	.00085	.00028	.01831	.00028
#3	.00170	-.00057	.00426	.00057	.00028	.02443	.00000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Avge	-.00018	.00122	.00744	.01704	.00339	-.02449	.02013
SDev	.00187	.00017	.00138	.00197	.00104	.00302	.01137
%RSD	1022.5	13.835	18.503	11.549	30.549	12.339	56.519
#1	-.00056	.00113	.00648	.01831	.00254	-.02113	.03268
#2	-.00183	.00113	.00901	.01803	.00310	-.02535	.01718
#3	.00185	.00142	.00682	.01477	.00455	-.02699	.01051

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Avge	-.00283	-.00113	.01233	.00170	.00075	.00038	.00019
SDev	.00075	.00149	.00179	.00426	.00016	.00016	.00071
%RSD	26.548	132.03	14.509	250.83	21.863	43.841	382.02
#1	-.00197	-.00282	.01409	-.00282	.00085	.00028	.00028
#2	-.00338	.00000	.01240	.00563	.00056	.00028	.00085
#3	-.00312	-.00057	.01051	.00227	.00085	.00057	-.00057

Elem	V	Zn
Avge	.00094	.00556
SDev	.00066	.00044
%RSD	69.799	7.8592
#1	.00056	.00592
#2	.00056	.00507
#3	.00170	.00568

THA 1-27-99
ICP 002
SDF: CorpMT0001DEN
TJA File 990127A
upload File 990127A.ASP

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3540	--	--	--	--	--	--
SDev	16.94619	--	--	--	--	--	--
%RSD	.4787522	--	--	--	--	--	--
#1	3549	--	--	--	--	--	--
#2	3550	--	--	--	--	--	--
#3	3520	--	--	--	--	--	--

Standardization Rpt. Wed 01-27-99 06:00:28 PM page 1

Method: ICP3Y Standard: CAL STD

Elem	Ag	Al	As	B	Ba	Be	Ca
Avge	.71548	1.2805	.32221	.23912	1.4867	1.5071	11.533
SDev	.00216	.0028	.00461	.00083	.0004	.0009	.035
%RSD	.30213	.22042	1.4308	.34882	.02480	.06120	.30139
#1	.71299	1.2774	.32182	.23832	1.4871	1.5061	11.493
#2	.71661	1.2813	.32700	.23906	1.4864	1.5078	11.553
#3	.71684	1.2829	.31781	.23999	1.4865	1.5075	11.553

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Avge	.85524	.55461	.85685	.32098	.85685	4.5890	3.0616
SDev	.00322	.00196	.00163	.00080	.00344	.0063	.0077
%RSD	.37656	.35334	.19009	.24869	.40188	.13800	.25120
#1	.85394	.55250	.85507	.32069	.85337	4.5839	3.0693
#2	.85891	.55496	.85720	.32188	.85692	4.5871	3.0614
#3	.85288	.55637	.85827	.32036	.86026	4.5961	3.0539

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Avge	6.7551	1.1476	1.2203	1.6137	1.3643	.98801	.59304
SDev	.0111	.0021	.0080	.0025	.0148	.00843	.00984
%RSD	.16361	.17862	.65342	.15659	1.0859	.85355	1.6594
#1	6.7424	1.1460	1.2137	1.6125	1.3609	.98018	.58194
#2	6.7621	1.1469	1.2292	1.6120	1.3515	.99694	.59651
#3	6.7608	1.1499	1.2181	1.6166	1.3806	.98693	.60068

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Avge	.73222	.82355	29.636	1.0055	1.6514	.53549	.27507
SDev	.00395	.00934	.098	.0097	.0006	.00049	.00308
%RSD	.53931	1.1344	.32997	.96833	.03471	.09106	1.1203
#1	.73676	.81431	29.523	.99490	1.6510	.53495	.27823
#2	.73027	.82334	29.686	1.0140	1.6521	.53589	.27207
#3	.72962	.83300	29.698	1.0077	1.6512	.53564	.27492

Elem	V	Zn
Avge	.54306	.43756
SDev	.00029	.00251
%RSD	.05321	.57321
#1	.54316	.43532
#2	.54329	.44027
#3	.54274	.43709

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3523	--	--	--	--	--	--
SDev	9.734659	--	--	--	--	--	--
%RSD	.2763483	--	--	--	--	--	--
#1	3533	--	--	--	--	--	--
#2	3514	--	--	--	--	--	--
#3	3521	--	--	--	--	--	--

Standardization Report Wed 01-27-99 06:00:35 PM page 1

Method: ICP3Y Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag	328.068	CAL STD	CAL BLK	1.39407	-.002101	01/27/99 05:57:19
Al	308.215	CAL STD	CAL BLK	7.95745	-.202337	01/27/99 05:57:19
As	193.696	CAL STD	CAL BLK	6.27768	.003051	01/27/99 05:57:19
B	249.678	CAL STD	CAL BLK	4.15914	.001562	01/27/99 05:57:19
Ba	493.409	CAL STD	CAL BLK	.672766	-.000190	01/27/99 05:57:19
Be	313.042	CAL STD	CAL BLK	.665406	.001629	01/27/99 05:57:19
Ca	317.933	CAL STD	CAL BLK	3.56334	-1.09596	01/27/99 05:57:19
Cd	228.802	CAL STD	CAL BLK	1.19185	-.001796	01/27/99 05:57:19
Co	228.616	CAL STD	CAL BLK	1.80820	.001531	01/27/99 05:57:19
Cr	267.716	CAL STD	CAL BLK	1.17051	-.002872	01/27/99 05:57:19
Cu	324.754	CAL STD	CAL BLK	3.11682	-.002054	01/27/99 05:57:19
Fe	259.940	CAL STD	CAL BLK	11.6716	-.003297	01/27/99 05:57:19
K	766.491	CAL STD	CAL BLK	43.7772	-.895075	01/27/99 05:57:19
Li	670.784	CAL STD	CAL BLK	3.26642	-.000307	01/27/99 05:57:19
Mg	279.079	CAL STD	CAL BLK	5.91774	.001081	01/27/99 05:57:19
Mn	257.610	CAL STD	CAL BLK	.871728	-.001068	01/27/99 05:57:19
Mo	202.030	CAL STD	CAL BLK	.821333	-.006109	01/27/99 05:57:19
Na	330.223	CAL STD	CAL BLK	250.398	-4.26645	01/27/99 05:57:19
Ni	231.604	CAL STD	CAL BLK	.734355	-.002492	01/27/99 05:57:19
P	214.914	CAL STD	CAL BLK	9.33162	.228543	01/27/99 05:57:19
Pb	220.353	CAL STD	CAL BLK	1.73341	-.034887	01/27/99 05:57:19
Sb	206.838	CAL STD	CAL BLK	1.28669	.003636	01/27/99 05:57:19
Se	196.026	CAL STD	CAL BLK	12.1166	.013674	01/27/99 05:57:19
SiO2	251.611	CAL STD	CAL BLK	7.22427	-.089085	01/27/99 05:57:19
Sn	189.989	CAL STD	CAL BLK	9.96616	-.016907	01/27/99 05:57:19
Sr	407.771	CAL STD	CAL BLK	.605812	-.000457	01/27/99 05:57:19
Ti	334.941	CAL STD	CAL BLK	1.86864	-.000705	01/27/99 05:57:19
Tl	190.864	CAL STD	CAL BLK	36.2488	-.006751	01/27/99 05:57:19
V	292.402	CAL STD	CAL BLK	1.80446	-.001703	01/27/99 05:57:19
Zn	213.856	CAL STD	CAL BLK	2.33729	-.012987	01/27/99 05:57:19

Analysis Report OC Standard Wed 01-27-99 06:04:11 PM page 1

Method: ICP3Y Sample Name: CAL STD Operator:
Run Time: 01/27/99 18:01:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0019	9.9967	1.9907	1.0068	.99749	.99732	39.955
SDev	.0049	.0077	.0552	.0055	.00133	.00105	.166
%RSD	.48486	.07695	2.7727	.54324	.13322	.10540	.41628
#1	1.0012	9.9896	1.9742	1.0009	.99885	.99794	39.824
#2	1.0071	10.005	1.9456	1.0076	.99620	.99791	40.142
#3	.99749	9.9956	2.0523	1.0117	.99741	.99611	39.899
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass
Value	1.0000	10.000	2.0000	1.0000	1.0000	1.0000	40.000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99732	1.0027	1.0004	.99960	9.9821	0199.92	9.9760
SDev	.00458	.0025	.0026	.00134	.0273	.36	.0409
%RSD	.45938	.24644	.25936	.13437	.27314	.18102	.40972
#1	.99214	1.0031	.99958	.99809	9.9625	0200.35	9.9961
#2	1.0009	1.0050	1.0034	1.0001	10.013	0199.78	9.9290
#3	.99896	1.0001	.99839	1.0007	9.9706	0199.68	10.003
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Fail	OC Pass
Value	1.0000	1.0000	1.0000	1.0000	10.000	~~100.00~~ 200.00	10.000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	40.008	.99972	.99352	400.47	1.0096	10.015	1.0130
SDev	.096	.00396	.00490	.84	.0034	.148	.0063
%RSD	.23921	.39629	.49279	.21010	.33180	1.4826	.62315
#1	39.964	.99547	.99183	401.30	1.0105	9.9068	1.0073
#2	40.118	1.0033	.99904	400.47	1.0059	9.9537	1.0198
#3	39.943	1.0004	.98969	399.62	1.0124	10.184	1.0119
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass
Value	40.000	1.0000	1.0000	400.00	1.0000	10.000	1.0000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97665	9.8847	213.31	10.056	.99923	.99931	9.8885
SDev	.02722	.0323	1.00	.035	.00040	.00046	.2265
%RSD	2.7874	.32649	.46904	.34575	.04038	.04578	2.2901
#1	.97466	9.9099	212.60	10.095	.99956	.99904	9.9827
#2	1.0048	9.8959	214.46	10.042	.99878	.99905	10.053
#3	.95048	9.8483	212.88	10.030	.99935	.99983	9.6301
Errors	OC Pass	OC Pass	NOCHECK	OC Pass	OC Pass	OC Pass	OC Pass
Value	1.0000	10.000		10.000	1.0000	1.0000	10.000

Range	5.0000	5.0000		5.0000	5.0000	5.0000	5.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	.99738	.99734					
SDev	.00331	.00488					
%RSD	.33146	.48984					
#1	.99859	.99181					
#2	.99991	1.0011					
#3	.99364	.99914					
Errors	OC Pass	OC Pass					
Value	1.0000	1.0000					
Range	5.0000	5.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3513	--	--	--	--	--	--
SDev	24.28519	--	--	--	--	--	--
%RSD	.6913780	--	--	--	--	--	--
#1	3518	--	--	--	--	--	--
#2	3486	--	--	--	--	--	--
#3	3534	--	--	--	--	--	--

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Method: ICP3Y Sample Name: ICV Operator: WGL
Run Time: 01/27/99 18:04:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51598	4.9932	.52528	.53432	.50997	.50944	20.034
SDev	.00360	.0141	.04445	.00616	.00127	.00038	.133
%RSD	.69674	.28162	8.4617	1.1522	.24903	.07355	.66211
#1	.51182	4.9840	.49363	.52864	.51095	.50920	19.882
#2	.51806	5.0094	.50613	.54086	.51041	.50925	20.091
#3	.51805	4.9862	H.57610	.53344	.50853	.50988	20.129
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	.55200	.55200	.55200	.55200	22.100
Low	.44800	4.4800	.44800	.44800	.44800	.44800	17.920

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51375	.50682	.51619	.51321	5.1036	50.043	4.9048
SDev	.00737	.00311	.00248	.00212	.0192	.253	.0272
%RSD	1.4346	.61448	.48011	.41254	.37586	.50585	.55471
#1	.50574	.50773	.51448	.51322	5.0816	50.005	4.9355
#2	.51527	.50336	.51506	.51532	5.1165	50.313	4.8949
#3	.52025	.50938	.51903	.51109	5.1128	49.811	4.8839
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	55.200	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	44.800	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.401	.51116	.51519	203.17	.52091	2.0073	.52215
SDev	.028	.00268	.00824	.78	.00793	.0296	.01738
%RSD	.13757	.52430	1.5998	.38364	1.5219	1.4761	3.3280
#1	20.377	.50812	.50854	202.56	.52992	1.9735	.53795
#2	20.394	.51319	.51263	202.90	.51501	2.0200	.52496
#3	20.432	.51217	.52441	204.05	.51779	2.0285	.50354
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.100	.55200	.55200	221.00	.55200	2.2100	.55200
Low	17.920	.44800	.44800	179.20	.44800	1.7920	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50062	5.0221	111.09	5.0299	.50561	.50937	5.0301
SDev	.01412	.0509	.56	.1207	.00062	.00105	.0526
%RSD	2.8197	1.0132	.50497	2.3991	.12224	.20709	1.0466
#1	.49606	4.9748	110.49	4.8905	.50632	.50846	5.0669
#2	.51645	5.0155	111.17	5.0998	.50533	.50912	5.0537
#3	.48934	5.0759	111.60	5.0993	.50519	.51053	4.9698
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5190	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4810	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.51090	.50691
SDev	.00200	.00783
%RSD	.39198	1.5438
#1	.50865	.49788
#2	.51249	.51108
#3	.51157	.51177

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3534	--	--	--	--	--	--
SDev	20.33362	--	--	--	--	--	--
%RSD	.5753369	--	--	--	--	--	--
#1	3556	--	--	--	--	--	--
#2	3530	--	--	--	--	--	--
#3	3516	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICB Operator: WGL
Run Time: 01/27/99 18:08:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00064	.00628	-.01182	-.00042	-.00025	-.00000	.00314
SDev	.00289	.00575	.00435	.00299	.00040	.00027	.00666
%RSD	454.83	91.500	36.830	715.18	158.39	7640.9	211.71
#1	.00269	.01201	-.00782	-.00321	.00020	.00029	.01073
#2	-.00210	.00051	-.01117	.00274	-.00038	-.00006	.00043
#3	-.00250	.00633	-.01646	-.00078	-.00057	-.00024	-.00173
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00003	.00173	.00035	.00061	-.00107	-.27691	.00031
SDev	.00120	.00487	.00072	.00180	.00386	.17443	.00054
%RSD	3632.4	282.28	208.35	293.94	360.49	62.992	171.69
#1	.00029	.00723	.00115	.00242	.00338	-.07981	.00063
#2	.00097	-.00205	.00011	.00059	-.00330	-.41136	-.00031
#3	-.00136	.00000	-.00023	-.00118	-.00330	-.33957	.00061
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00468	-.00024	.00317	.14801	-.00297	-.00852	-.01688
SDev	.01902	.00039	.00530	1.1560	.00570	.04369	.01868
%RSD	406.27	161.56	167.21	781.06	191.82	512.79	110.67
#1	.01478	.00018	.00919	1.4012	-.00184	.01601	-.00394
#2	-.02324	-.00033	-.00076	-.08035	-.00915	.01739	-.00840
#3	-.00558	-.00058	.00107	-.87678	.00207	-.05897	-.03830
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01428	-.01391	.10325	-.04144	.00006	.00000	-.04439
SDev	.01428	.01826	.04670	.01642	.00000	.00030	.02939
%RSD	100.01	131.25	45.232	39.618	7.1069	13275.	66.212
#1	.02988	-.02106	.15091	-.05106	.00006	-.00017	-.02750
#2	.00184	-.02752	.10126	-.05078	.00006	.00035	-.02733
#3	.01112	.00684	.05757	-.02248	.00006	-.00018	-.07832
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	-.00061	-.00059					
SDev	.00216	.00047					
%RSD	355.47	79.620					
#1	.00158	-.00027					
#2	-.00274	-.00037					
#3	-.00067	-.00113					
Errors	LC Pass	LC Pass					
High	.01000	.02000					
Low	-.01000	-.02000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3522	--	--	--	--	--	--
SDev	28.76007	--	--	--	--	--	--
%RSD	.8165721	--	--	--	--	--	--
#1	3490	--	--	--	--	--	--
#2	3530	--	--	--	--	--	--
#3	3546	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CRI Operator: WGL
Run Time: 01/27/99 18:11:31
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01989	.00282	.03116	-.00142	-.00019	.01012	.00021
SDev	.00082	.00470	.01945	.00069	.00000	.00005	.00449
%RSD	4.1125	166.84	62.423	48.482	.00000	.51296	2148.9
#1	.02035	.00113	.03956	-.00103	-.00019	.01014	.00359
#2	.01894	-.00081	.00892	-.00101	-.00019	.01006	-.00488
#3	.02037	.00812	.04499	-.00221	-.00019	.01015	.00191
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	.03000					.01500	
Low	.01000					.00500	

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01139	.10299	.02150	.05274	-.00000	-.17003	-.00000
SDev	.00111	.00429	.00038	.00177	.00002	.27804	.00142
%RSD	9.7809	4.1620	1.7673	3.3554	7661.1	163.52	168740.
#1	.01218	.10570	.02123	.05439	.00001	-.24225	-.00031
#2	.01188	.10522	.02134	.05296	-.00002	.13699	.00155
#3	.01012	.09805	.02194	.05087	.00001	-.40484	-.00124
Errors	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK
High	.01500	.15000	.03000	.07500			
Low	.00500	.05000	.01000	.02500			

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00078	.03186	.00439	.55709	.08396	-.02993	.00223
SDev	.00426	.00030	.00032	.34686	.00363	.02423	.00131
%RSD	542.40	.94256	7.2951	62.264	4.3187	80.959	58.846
#1	-.00373	.03220	.00402	.95403	.08077	-.03681	.00338
#2	.00472	.03163	.00463	.40488	.08790	-.00300	.00253
#3	.00136	.03174	.00451	.31235	.08320	-.04997	.00080
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		.04500			.12000		
Low		.01500			.04000		

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.13656	.02738	.03179	-.03922	.00006	.00018	.00259
SDev	.00566	.05506	.02126	.03186	.00000	.00062	.03634
%RSD	4.1442	201.07	66.865	81.222	4.8757	342.49	1401.4
#1	.13254	.08983	.05626	-.01069	.00006	.00090	.00625
#2	.13412	-.01414	.01793	-.03338	.00006	-.00018	.03697
#3	.14304	.00645	.02117	-.07360	.00007	-.00017	-.03544
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	.18000						

Low	.06000	
Elem	V	Zn
Units	ppm	ppm
Avge	.10131	.04062
SDev	.00054	.00044
%RSD	.53429	1.0959
#1	.10193	.04011
#2	.10096	.04090
#3	.10104	.04085
Errors	LC Pass	LC Pass
High	.15000	.06000
Low	.05000	.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3497	--	--	--	--	--	--
SDev	20.79633	--	--	--	--	--	--
%RSD	.5947337	--	--	--	--	--	--
#1	3487	--	--	--	--	--	--
#2	3521	--	--	--	--	--	--
#3	3483	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSA Operator: WGL
Run Time: 01/27/99 18:14:58
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00085	485.18	.07766	.01775	.00228	.00011	471.54
SDev	.00054	.29	.12297	.00342	.00018	.00019	.34
%RSD	63.347	.06007	158.35	19.286	8.0854	165.83	.07266
#1	-.00023	485.16	H.16828	.01389	.00229	.00011	471.79
#2	-.00109	485.49	-.06233	.01897	.00209	.00031	471.68
#3	-.00123	484.90	H.12702	.02040	.00246	-.00007	471.15
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00629	.00205	.00481	-.00119	179.95	-.38050	.00031
SDev	.00131	.00033	.00144	.00092	.09	.17723	.00053
%RSD	20.794	16.254	29.891	77.744	.05100	46.578	172.56
#1	-.00647	.00227	.00384	-.00130	179.86	-.51051	.00062
#2	-.00750	.00222	.00647	-.00205	180.04	-.17863	.00061
#3	-.00490	.00167	.00414	-.00021	179.94	-.45237	-.00031
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	520.79	.00126	.00412	-.65022	.00328	.03570	.01920
SDev	.31	.00027	.00758	.16533	.01014	.09642	.04313
%RSD	.06036	21.768	183.99	25.426	309.47	270.07	224.70
#1	520.47	.00111	.01211	-.53999	-.00830	.14701	H.06900
#2	521.09	.00109	-.00297	-.84031	.01057	-.02243	-.00590
#3	520.81	.00157	.00322	-.57036	.00756	-.01746	-.00552
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01192	.03942	.02238	.05525	.01891	.00283	.31112
SDev	.05545	.18305	.02406	.10135	.00013	.00077	.08313
%RSD	465.20	464.34	107.53	183.44	.69985	27.202	26.721
#1	.05878	H.24221	.04795	H.16980	.01877	.00365	.23363
#2	.02628	-.11358	.01899	-.02275	.01903	.00213	.30079
#3	-.04930	-.01037	.00018	.01869	.01894	.00270	.39893
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00313	-.00406
SDev	.00107	.00245
%RSD	34.105	60.313
#1	.00333	-.00559
#2	.00198	-.00123
#3	.00409	-.00534

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3544	--	--	--	--	--	--
SDev	15.50971	--	--	--	--	--	--
%RSD	.4376008	--	--	--	--	--	--
#1	3529	--	--	--	--	--	--
#2	3544	--	--	--	--	--	--
#3	3560	--	--	--	--	--	--

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Method: ICP3Y Sample Name: ICSAB Operator: WGL
Run Time: 01/27/99 18:18:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96035	483.44	1.8048	2.0161	.48035	.48722	468.55
SDev	.00285	.33	.0471	.0068	.00026	.00030	1.11
%RSD	.29700	.06828	2.6075	.33696	.05474	.06239	.23705
#1	.95856	483.07	1.8495	2.0172	.48042	.48687	467.31
#2	.95884	483.71	1.8091	2.0088	.48058	.48736	468.92
#3	.96364	483.55	1.7557	2.0223	.48006	.48743	469.43
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.95852	.45019	.46987	.48544	178.84	48.810	.98538
SDev	.00310	.00485	.00025	.00025	.33	.292	.00323
%RSD	.32385	1.0770	.05302	.05233	.18220	.59771	.32734
#1	.95830	.45460	.46959	.48532	178.48	48.481	.98520
#2	.95553	.44500	.46996	.48528	178.90	48.908	.98869
#3	.96173	.45098	.47006	.48574	179.12	49.039	.98225
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	518.39	.46382	.89549	48.592	.92259	1.8770	1.0077
SDev	.73	.00084	.00650	.835	.01187	.0200	.0142
%RSD	.14076	.18197	.72598	1.7183	1.2863	1.0655	1.4117
#1	517.56	.46300	.89215	48.623	.91028	1.8887	1.0049
#2	518.71	.46377	.90298	47.742	.93396	1.8884	1.0231
#3	518.90	.46468	.89133	49.411	.92351	1.8539	.99506
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.84936	4.7427	20.765	9.1175	.95690	.93262	9.4284
SDev	.02215	.1931	.047	.0488	.00054	.00159	.0866
%RSD	2.6084	4.0713	.22674	.53488	.05603	.17057	.91821
#1	.84043	4.8856	20.729	9.0751	.95752	93113	9.5281
#2	.83307	4.5230	20.749	9.1708	.95659	.93243	9.3844
#3	.87459	4.8194	20.818	9.1065	.95660	.93430	9.3726
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.46679	.93918
SDev	.00117	.00483
%RSD	.25098	.51476
#1	.46552	.93705
#2	.46784	.94471
#3	.46700	.93577

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3563	--	--	--	--	--	--
SDev	3.643737	--	--	--	--	--	--
%RSD	.1022519	--	--	--	--	--	--
#1	3560	--	--	--	--	--	--
#2	3567	--	--	--	--	--	--
#3	3564	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CCV1 Operator: WGL
Run Time: 01/27/99 18:22:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50952	5.0268	1.0205	.50642	.50377	.50835	20.255
SDev	.00090	.0268	.0317	.00713	.00009	.00020	.034
%RSD	.17579	.53406	3.1103	1.4089	.01791	.03955	.16656
#1	.50850	5.0169	1.0351	.49827	.50381	.50831	20.219
#2	.51017	5.0571	1.0423	.50944	.50367	.50818	20.260
#3	.50990	5.0063	.98406	.51154	.50384	.50857	20.286
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50841	.50812	.51028	.50669	5.1040	100.63	4.9899
SDev	.00626	.00252	.00237	.00172	.0063	.08	.0073
%RSD	1.2303	.49594	.46417	.33879	.12322	.08318	.14663
#1	.50207	.50548	.51150	.50854	5.1073	100.53	4.9983
#2	.51458	.50837	.51179	.50515	5.0968	100.69	4.9847
#3	.50856	.51050	.50755	.50638	5.1080	100.66	4.9868
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb NR
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.350	.50879	.50339	203.06	.51360	5.0719	.50356
SDev	.033	.00112	.00987	.98	.00268	.0492	.03714
%RSD	.16431	.21906	1.9608	.48137	.52217	.96919	7.3746
#1	20.346	.50998	.50357	202.89	.51645	5.0958	.53613
#2	20.318	.50777	.51317	202.17	.51112	5.0154	.46312
#3	20.385	.50863	.49343	204.11	.51322	5.1045	.51143
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50634	5.0469	108.14	5.0440	.50447	.50215	5.0228
SDev	.02339	.0595	.40	.0675	.00001	.00075	.1083
%RSD	4.6193	1.1788	.36637	1.3373	.00231	.14946	2.1568
#1	.50657	5.1104	107.76	5.0931	.50448	.50157	4.9031
#2	.52961	4.9925	108.11	5.0718	.50446	.50299	5.0515
#3	.48284	5.0376	108.55	4.9671	.50448	.50188	5.1140
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50446	.50558
SDev	.00130	.00409
%RSD	.25861	.80868
#1	.50562	.50131
#2	.50305	.50596
#3	.50471	.50946

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3496	--	--	--	--	--	--
SDev	7.394141	--	--	--	--	--	--
%RSD	.2115155	--	--	--	--	--	--
#1	3497	--	--	--	--	--	--
#2	3502	--	--	--	--	--	--
#3	3488	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CCB1 Operator: WGL
Run Time: 01/27/99 18:25:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00029	.00544	-.01367	-.00161	-.00032	-.00008	-.00935
SDev	.00071	.00629	.01429	.00297	.00011	.00002	.00122
%RSD	242.28	115.62	104.53	184.40	34.762	22.250	13.058
#1	.00072	.00934	-.01152	-.00205	-.00019	-.00010	-.00802
#2	-.00052	-.00181	-.02892	-.00433	-.00038	-.00006	-.01042
#3	.00068	.00878	-.00058	.00155	-.00038	-.00008	-.00961
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00034	.00204	.00026	.00062	-.00217	-.18601	.00124
SDev	.00240	.00260	.00136	.00003	.00195	.03990	.00106
%RSD	701.05	127.47	532.78	4.4927	89.749	21.450	85.273
#1	.00310	-.00056	.00051	.00065	.00008	-.18628	.00064
#2	-.00129	.00205	-.00121	.00060	-.00330	-.22578	.00247
#3	-.00078	.00463	.00147	.00062	-.00330	-.14598	.00062
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00009	-.00007	-.00081	.27078	.00149	-.01643	-.01663
SDev	.00503	.00025	.00298	.74407	.00173	.03435	.01537
%RSD	5621.5	354.43	368.02	274.79	116.21	208.99	92.465
#1	-.00582	-.00006	-.00421	.80238	.00324	-.00040	-.00033
#2	.00193	-.00033	.00133	-.57956	-.00023	.00696	-.01867
#3	.00362	.00018	.00045	.58953	.00146	-.05585	-.03088
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01729	-.01655	.03217	-.00529	.00006	-.00034	.00746
SDev	.01085	.03601	.02379	.06308	.00001	.00062	.08866
%RSD	62.764	217.60	73.964	1192.3	8.8104	181.06	1188.2
#1	-.00496	-.05639	.05717	.05799	.00007	.00038	.09805
#2	-.02153	-.00691	.02953	-.00570	.00006	-.00070	.00347
#3	-.02538	.01366	.00980	-.06816	.00006	-.00070	-.07914
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	-.00034	-.00142
SDev	.00062	.00038
%RSD	179.91	26.875
#1	-.00074	-.00151
#2	-.00066	-.00174
#3	.00037	-.00100

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3499	--	--	--	--	--	--
SDev	37.20171	--	--	--	--	--	--
%RSD	1.063192	--	--	--	--	--	--
#1	3459	--	--	--	--	--	--
#2	3532	--	--	--	--	--	--
#3	3506	--	--	--	--	--	--

Method: ICP3Y Sample Name: CO2GNB SOIL Operator: THA
Run Time: 01/27/99 18:32:01
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.11474	.87774	-.41560	-.12368	.15632	-.00384	14.949
SDev	.16922	.26097	1.63043	.18312	.02066	.01163	.149
%RSD	147.49	29.732	392.31	148.05	13.214	302.76	.99833
#1	.07506	1.1160	1.2174	.03531	.17716	-.01235	14.983
#2	-.24989	.59884	-2.0435	-.08247	.13585	-.00860	15.078
#3	-.16939	.91836	-.42068	-.32390	.15595	.00941	14.786
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.0000	10.000	10.000	10.000	1.0000	.20000	20.000
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01587	.03156	-.02635	.18592	1.3591	-11.407	.09491
SDev	.10266	.18284	.21756	.05495	.0117	14.004	.10876
%RSD	646.79	579.36	825.77	29.554	.85851	122.77	114.59
#1	.05640	.20536	.22487	.24936	1.3721	-23.130	-.03067
#2	-.13339	-.15915	-.15224	.15340	1.3493	-15.191	.15730
#3	.02937	.04847	-.15166	.15499	1.3560	4.1003	.15810
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.50000	1.0000	1.0000	2.0000	10.000	500.00	5.0000
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.0587	.02783	.05557	-16.225	.07119	1.7023	-.74287
SDev	2.3347	.01443	.19091	49.121	.22689	2.5341	1.27703
%RSD	76.329	51.839	343.55	302.75	318.68	148.86	171.91
#1	4.9419	.02042	.13202	18.391	.13635	-1.2219	.25387
#2	.44649	.01861	-.16172	5.3794	.25838	3.0727	-.30012
#3	3.7878	.04445	.19641	-72.446	-.18114	3.2562	-2.1823
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20.000	1.0000	2.0000	500.00	4.0000	30.000	5.0000
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.7189	2.3051	5.5915	-5.5162	.03618	.03795	-1.3746
SDev	2.4844	.4125	1.1594	4.0795	.01025	.05481	.6088
%RSD	144.53	17.896	20.736	73.955	28.323	144.40	44.290
#1	.20606	2.7814	6.8892	-1.1097	.04267	.09295	-.67161
#2	.36457	2.0653	5.2275	-6.2776	.04150	-.01666	-1.7259
#3	4.5862	2.0685	4.6577	-9.1615	.02436	.03758	-1.7263
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6.0000	20.000	50.000	10.000	5.0000	1.5000	200.00

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	-.02934	.61727					
SDev	.16376	.15251					
%RSD	558.10	24.708					
#1	.14851	.74407					
#2	-.17389	.44803					
#3	-.06265	.65970					
Errors	LC Pass	LC Pass					
High	1.0000	2.0000					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3455	--	--	--	--	--	--
SDev	23.46516	--	--	--	--	--	--
%RSD	.6791186	--	--	--	--	--	--
#1	3430	--	--	--	--	--	--
#2	3475	--	--	--	--	--	--
#3	3461	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CO2GNC SOIL Operator: THA
Run Time: 01/27/99 18:37:13
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.6100	191.88	187.29	106.64	194.15	5.1297	4798.4
SDev	.2551	.93	5.96	1.18	.40	.0031	21.5
%RSD	5.5341	.48671	3.1836	1.1056	.20455	.05992	.44726
#1	4.3314	190.81	189.20	105.29	194.51	5.1324	4773.8
#2	4.8322	192.52	180.61	107.49	194.21	5.1305	4807.9
#3	4.6664	192.33	192.07	107.14	193.72	5.1263	4813.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.7500	240.00	216.00	125.00	224.00	5.9000	5700.0
Low	4.0000	176.00	176.00	85.000	170.00	4.0000	4250.0

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.4313	47.334	18.800	24.397	97.732	4769.6	94.627
SDev	.2130	.628	.077	.101	.489	34.0	.589
%RSD	3.9223	1.3274	.40945	.41520	.50035	.71232	.62243
#1	5.2459	46.641	18.815	24.403	97.185	4733.1	95.272
#2	5.6640	47.493	18.716	24.495	97.881	4800.3	94.489
#3	5.3840	47.867	18.868	24.292	98.128	4775.5	94.119
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6.0000	58.000	22.400	28.750	117.00	5500.0	120.00
Low	4.0000	40.000	16.600	21.000	87.000	4100.0	80.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5018.1	48.597	94.820	4928.5	48.746	971.31	48.351
SDev	3.2	.191	.686	9.2	1.155	14.59	1.152
%RSD	.06440	.39205	.72396	.18678	2.3686	1.5017	2.3818
#1	5014.4	48.409	94.110	4939.0	47.491	957.37	48.096
#2	5019.1	48.790	95.480	4921.8	48.985	986.46	47.347
#3	5020.7	48.593	94.869	4924.6	49.762	970.09	49.608
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	5650.0	57.000	120.00	5850.0	56.000		57.000
Low	4200.0	42.000	80.000	4250.0	42.000		41.000

Elem	Sb	Se	SiO2 NR	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	42.600	180.85	L1306.7	198.54	96.217	95.888	178.90
SDev	2.764	3.77	4.9	2.99	.113	.060	5.37
%RSD	6.4888	2.0869	.37263	1.5068	.11704	.06223	2.9999
#1	43.234	180.71	L1301.5	195.81	96.262	95.934	180.61
#2	44.993	177.16	L1307.4	201.74	96.301	95.910	172.88
#3	L39.574	184.70	L1311.2	198.07	96.089	95.821	183.19
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	56.500	240.00	2568.0	240.00	120.00	120.00	240.00

Low	41.000	160.00	1712.0	160.00	80.000	80.000	160.00

Elem	V	Zn
Units	ppm	ppm
Avge	47.458	47.821
SDev	.203	.593
%RSD	.42820	1.2395
#1	47.242	47.517
#2	47.646	48.504
#3	47.487	47.442

Errors	LC Pass	LC Pass
High	58.000	60.000
Low	42.500	40.000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3461	--	--	--	--	--	--
SDev	6.627303	--	--	--	--	--	--
%RSD	.1914793	--	--	--	--	--	--
#1	3469	--	--	--	--	--	--
#2	3456	--	--	--	--	--	--
#3	3459	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CO2GNL SOIL Operator: THA
Run Time: 01/27/99 18:40:45
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.7916	193.67	185.10	107.57	194.15	5.1106	4799.9
SDev	.3418	2.30	4.98	.56	.13	.0190	27.2
%RSD	7.1326	1.1859	2.6890	.51852	.06560	.37204	.56682
#1	5.1554	195.85	185.56	108.18	194.20	5.1318	4818.0
#2	4.4772	191.27	189.84	107.46	194.25	5.0949	4768.6
#3	4.7422	193.89	179.91	107.08	194.01	5.1052	4813.0
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.7500	240.00	216.00	125.00	224.00	5.9000	5700.0
Low	4.0000	176.00	176.00	85.000	170.00	4.0000	4250.0

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.1189	47.381	19.210	24.679	98.255	4821.5	94.481
SDev	.1805	.348	.316	.191	.434	61.5	.088
%RSD	3.5255	.73391	1.6466	.77256	.44158	1.2749	.09287
#1	5.3238	47.441	19.563	24.880	98.725	4886.9	94.430
#2	5.0490	47.007	18.954	24.501	97.870	4765.0	94.583
#3	4.9838	47.695	19.111	24.654	98.171	4812.6	94.431
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6.0000	58.000	22.400	28.750	117.00	5500.0	120.00
Low	4.0000	40.000	16.600	21.000	87.000	4100.0	80.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5018.9	48.585	95.877	4993.4	48.682	969.33	48.151
SDev	11.6	.142	.883	196.2	.613	8.89	1.355
%RSD	.23165	.29314	.92057	3.9287	1.2585	.91682	2.8138
#1	5025.8	48.734	96.783	5159.6	48.567	978.79	49.407
#2	5005.5	48.450	95.828	4777.0	48.135	968.05	48.332
#3	5025.5	48.571	95.020	5043.5	49.344	961.15	46.715
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	5650.0	57.000	120.00	5850.0	56.000		57.000
Low	4200.0	42.000	80.000	4250.0	42.000		41.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	44.243	189.03	L1338.8	196.44	96.155	95.733	184.93
SDev	.747	5.53	4.5	10.74	.058	.195	4.45
%RSD	1.6875	2.9256	.33244	5.4684	.05981	.20410	2.4077
#1	44.610	182.73	L1339.2	208.44	96.222	95.816	179.80
#2	43.384	191.26	L1334.1	187.71	96.118	95.510	187.31
#3	44.735	193.10	L1343.0	193.18	96.127	95.874	187.69
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	56.500	240.00	2568.0	240.00	120.00	120.00	240.00

NR 2,3,4

Low	41.000	160.00	1712.0	160.00	80.000	80.000	160.00

Elem	V	Zn
Units	ppm	ppm
Avge	47.744	47.959
SDev	.214	.252
%RSD	.44776	.52527
#1	47.967	47.708
#2	47.541	47.957
#3	47.723	48.212
Errors	LC Pass	LC Pass
High	58.000	60.000
Low	42.500	40.000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3439	--	--	--	--	--	--
SDev	38.93433	--	--	--	--	--	--
%RSD	1.132212	--	--	--	--	--	--
#1	3403	--	--	--	--	--	--
#2	3480	--	--	--	--	--	--
#3	3434	--	--	--	--	--	--

Analysis Report Wed 01-27-99 06:47:28 PM page 1

Method: ICP3Y Sample Name: CPAX1 Operator: THA
Run Time: 01/27/99 18:44:18
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.46850	7249.5	12.081	6.0021	142.02	.47459	4070.3
SDev	.06556	8.5	6.717	.3367	.69	.01195	19.8
%RSD	13.994	.11748	55.600	5.6099	.48295	2.5187	.48626
#1	.51890	7252.5	8.5015	6.3435	142.80	.47909	4049.8
#2	.49221	7256.1	19.830	5.6703	141.53	.48364	4089.3
#3	.39438	7239.9	7.9118	5.9925	141.72	.46104	4071.9
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.9705	8.9978	15.509	23.786	13026.	2387.7	6.0577
SDev	.0885	.3174	.270	.033	31.	11.4	.1198
%RSD	2.9793	3.5276	1.7405	.14001	.24000	.47755	1.9779
#1	3.0340	9.0918	15.344	23.811	13008.	2376.0	6.0024
#2	2.8694	9.2576	15.820	23.800	13062.	2388.3	5.9756
#3	3.0081	8.6440	15.362	23.749	13009.	2398.8	6.1952
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1930.9	252.18	.67592	205.09	7.5455	1063.6	156.42
SDev	1.5	.80	.14216	44.71	.2364	20.1	1.44
%RSD	.07988	.31760	21.032	21.799	3.1330	1.8870	.92150
#1	1931.7	251.57	.82987	171.03	7.7772	1042.1	155.18
#2	1931.9	253.09	.64829	188.53	7.5546	1081.7	158.00
#3	1929.2	251.89	.54960	255.72	7.3047	1067.1	156.06
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.50049	-2.5430	1211.9	-1.5238	45.614	363.59	12.350
SDev	4.16820	7.3906	1.3	3.1517	.167	.67	3.108
%RSD	832.83	290.63	.10356	206.83	.36503	.18488	25.164
#1	-2.1705	-7.1046	1210.5	1.3071	45.796	364.20	15.407
#2	4.2438	-6.5083	1212.3	-4.9199	45.575	363.69	12.450
#3	-3.5747	5.9840	1213.0	-.95867	45.470	362.87	9.1937
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	24.231	273.87					
SDev	.072	1.58					
%RSD	.29510	.57869					
#1	24.236	272.68					
#2	24.300	275.67					
#3	24.157	273.26					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3505	--	--	--	--	--	--
SDev	21.25839	--	--	--	--	--	--
%RSD	.6065206	--	--	--	--	--	--
#1	3519	--	--	--	--	--	--
#2	3481	--	--	--	--	--	--
#3	3515	--	--	--	--	--	--

reviewed THA 1-27-99

Analysis Report Wed 01-27-99 06:50:59 PM page 1

Method: ICP3Y Sample Name: CPAX1P SERDIL Operator: THA
Run Time: 01/27/99 18:47:50
Comment:
Mode: CONC Corr. Factor: 500

remake + reviewed at end THA 1-27-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51254	10755.	17.579	9.6277	199.84	.51661	6005.9
SDev	.89245	17.	16.151	2.9296	.86	.05142	15.6
%RSD	174.12	.16229	91.873	30.429	.42804	9.9530	.25901
#1	1.3777	10773.	16.176	6.5137	200.83	.54340	5999.6
#2	.56488	10754.	34.385	10.040	199.30	.54910	6023.6
#3	-.40493	10738.	2.1758	12.329	199.40	.45733	5994.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	500000.	50000.	50000.	50000.	25000.	500000.
Low	-5.0000	-50.000	-50.000	-50.000	-5.0000	-1.0000	-100.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.4848	14.339	23.154	34.268	19282.	3416.4	8.4262
SDev	.2995	.247	.344	.685	41.	84.3	.5584
%RSD	6.6786	1.7229	1.4847	1.9995	.21416	2.4670	6.6265
#1	4.1502	14.487	23.073	34.965	19308.	3397.8	8.1099
#2	4.5763	14.053	22.858	34.242	19303.	3508.5	9.0709
#3	4.7280	14.475	23.531	33.596	19234.	3343.0	8.0978
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	50000.	50000.	250000.	250000.	25000.
Low	-2.5000	-5.0000	-5.0000	-10.000	-50.000	-2500.0	-25.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2871.1	372.02	2.3992	330.73	12.795	1515.6	211.97
SDev	13.8	1.26	.2374	84.86	2.325	4.1	2.68
%RSD	.48015	.33981	9.8954	25.657	18.168	.26810	1.2631
#1	2871.4	371.95	2.6283	412.73	15.142	1511.0	211.13
#2	2884.7	373.32	2.4151	243.28	12.749	1517.1	209.80
#3	2857.2	370.79	2.1543	336.18	10.493	1518.7	214.96
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	50000.	50000.	1000000.	50000.	100000.	50000.
Low	-100.00	-5.0000	-10.000	-2500.0	-20.000	-150.00	-25.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-2.7625	-8.4058	1850.5	-20.983	64.890	526.77	-4.6709
SDev	10.7223	20.6146	6.3	4.239	.237	1.35	10.6455
%RSD	388.14	245.24	.34123	20.202	.36493	.25620	227.91
#1	-14.550	-6.0756	1850.2	-16.352	65.161	527.87	-13.177
#2	6.4115	-30.086	1857.0	-21.928	64.782	527.17	7.2673
#3	-.14906	10.945	1844.4	-24.670	64.725	525.26	-8.1029
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	107000.	50000.	25000.	50000.	50000.

Low	-30.000	-100.00	-250.00	-50.000	-25.000	-7.5000	-1000.0
Elem	V	Zn					
Units	ppm	ppm					
Avge	35.430	368.14					
SDev	.855	2.79					
%RSD	2.4145	.75807					
#1	36.409	365.85					
#2	35.051	371.25					
#3	34.829	367.31					
Errors	LC Pass	LC Pass					
High	50000.	50000.					
Low	-5.0000	-10.000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3554	--	--	--	--	--	--
SDev	11.35416	--	--	--	--	--	--
%RSD	.3194877	--	--	--	--	--	--
#1	3558	--	--	--	--	--	--
#2	3541	--	--	--	--	--	--
#3	3563	--	--	--	--	--	--

remake + rerun TAH 1-27-99

Analysis Report Wed 01-27-99 06:54:31 PM page 1

Method: ICP3Y Sample Name: CPA~~X~~1S MS Operator: THA
Run Time: 01/27/99 18:51:22
Comment:
Mode: CONC Corr. Factor: 100

See rerun on 0127H run THA 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.8547	10129.	162.82	96.853	309.53	4.8115	7961.1
SDev	.0821	46.	7.76	.125	2.49	.0320	20.9
%RSD	1.6921	.45521	4.7654	.12894	.80576	.66414	.26315
#1	4.9451	10160.	157.67	96.931	312.02	4.8434	7957.5
#2	4.7846	10150.	159.05	96.919	309.54	4.8117	7983.7
#3	4.8342	10076.	171.74	96.709	307.03	4.7795	7942.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.5286	47.717	32.338	43.776	12829.	6652.0	89.053
SDev	.1405	.271	.423	.100	44.	52.8	.896
%RSD	1.8664	.56822	1.3072	.22756	.34560	.79376	1.0064
#1	7.3774	48.024	32.754	43.854	12853.	6692.6	89.930
#2	7.6552	47.509	32.353	43.812	12857.	6671.2	89.090
#3	7.5532	47.619	31.909	43.664	12778.	6592.3	88.139
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6191.1	283.19	82.007	4423.4	48.559	1803.1	192.83
SDev	27.6	.89	.448	77.9	.902	19.9	1.07
%RSD	.44585	.31263	.54661	1.7616	1.8578	1.1048	.55567
#1	6208.1	283.50	81.626	4513.3	47.970	1814.3	192.73
#2	6206.1	283.87	82.501	4379.5	48.109	1814.9	191.81
#3	6159.3	282.19	81.892	4377.2	49.598	1780.1	193.95
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	29.083	161.21	1813.6	158.51	128.20	509.09	173.80
SDev	.779	17.21	3.2	6.94	.87	2.47	5.67
%RSD	2.6784	10.678	.17781	4.3811	.67601	.48597	3.2643
#1	29.960	181.07	1810.2	153.59	129.01	511.07	180.17
#2	28.820	150.49	1816.7	155.49	128.30	509.87	171.94
#3	28.470	152.08	1813.8	166.45	127.29	506.32	169.28
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	66.169	308.14					
SDev	.477	1.05					
%RSD	.72042	.34121					
#1	66.548	307.70					
#2	66.326	309.34					
#3	65.634	307.38					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3469	--	--	--	--	--	--
SDev	5.793470	--	--	--	--	--	--
%RSD	.1670208	--	--	--	--	--	--
#1	3468	--	--	--	--	--	--
#2	3464	--	--	--	--	--	--
#3	3475	--	--	--	--	--	--

1-28-99

Analysis Report Wed 01-27-99 06:58:02 PM page 1

Method: ICP3Y Sample Name: CPAX1X DUP Operator: THA
Run Time: 01/27/99 18:54:53
Comment:
Mode: CONC Corr. Factor: 100

used data from 0127H run THA 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.41996	7998.2	4.2501	6.6406	156.57	.53846	4502.8
SDev	.11605	35.7	4.6269	.3281	1.00	.02289	20.8
%RSD	27.633	.44620	108.86	4.9403	.63633	4.2504	.46235
#1	.55347	8032.7	-.12773	6.2761	157.65	.56116	4519.8
#2	.36310	8000.3	9.0912	6.7335	156.35	.53882	4509.1
#3	.34330	7961.5	3.7869	6.9122	155.70	.51539	4479.6
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.3550	10.202	17.079	26.339	14199.	2652.6	6.7392
SDev	.1995	.389	.107	.302	75.	39.2	.0740
%RSD	5.9458	3.8174	.62393	1.1484	.53001	1.4770	1.0983
#1	3.3428	10.485	17.186	26.678	14262.	2687.7	6.6694
#2	3.1619	10.363	16.956	26.241	14219.	2659.8	6.8168
#3	3.5603	9.7579	17.145	26.098	14115.	2610.4	6.7313
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2130.8	277.95	1.0365	190.68	9.6352	1155.8	171.49
SDev	8.9	1.44	.9439	107.28	.5554	12.2	.45
%RSD	.41538	.51723	91.060	56.265	5.7646	1.0516	.26040
#1	2140.7	278.97	2.0849	295.63	9.3354	1169.7	171.70
#2	2128.1	278.58	.25422	195.19	9.2940	1147.3	170.97
#3	2123.6	276.31	.77053	81.206	10.276	1150.4	171.79
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.34667	-8.1939	1039.1	1.4948	50.227	375.04	6.0093
SDev	1.2862	5.4833	8.7	5.5323	.331	1.96	1.5848
%RSD	371.00	66.919	.83716	370.10	.65954	.52196	26.372
#1	1.3364	-3.7829	1048.2	2.5240	50.583	376.97	4.7120
#2	-1.1071	-14.333	1038.5	-4.4798	50.171	375.10	7.7757
#3	.81070	-6.4657	1030.8	6.4403	49.928	373.06	5.5402
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	26.078	292.74
SDev	.278	1.59
%RSD	1.0656	.54392
#1	26.286	293.17
#2	26.186	294.08
#3	25.762	290.98
Errors	LC Pass	LC Pass
High	10000.	10000.
Low	-1.0000	-2.0000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3442	--	--	--	--	--	--
SDev	33.26585	--	--	--	--	--	--
%RSD	.9665411	--	--	--	--	--	--
#1	3413	--	--	--	--	--	--
#2	3435	--	--	--	--	--	--
#3	3478	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CPA3 Operator: THA
Run Time: 01/27/99 18:58:24
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0824	7962.6	275.65	5.3348	149.11	.56958	3665.9
SDev	.0311	18.6	4.89	.4240	.18	.01211	16.6
%RSD	2.8743	.23371	1.7741	7.9484	.11783	2.1266	.45280
#1	1.1007	7942.5	270.22	5.3657	149.19	.58352	3646.8
#2	1.0464	7966.1	277.02	5.7426	148.91	.56362	3676.6
#3	1.0999	7979.2	279.71	4.8962	149.23	.56160	3674.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.8801	13.037	20.233	23.865	13706.	2113.3	6.7286
SDev	.4638	.181	.206	.102	39.	15.4	.0471
%RSD	6.7407	1.3917	1.0186	.42820	.28210	.72937	.69927
#1	6.4910	12.837	20.322	23.925	13662.	2097.0	6.6764
#2	6.7561	13.191	20.380	23.924	13731.	2127.6	6.7677
#3	7.3933	13.082	19.998	23.747	13727.	2115.3	6.7417
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2169.7	263.14	.09397	140.22	8.1274	892.92	212.07
SDev	4.3	.78	.54186	15.04	.6521	4.95	1.24
%RSD	.19919	.29676	576.61	10.727	8.0237	.55474	.58282
#1	2165.2	262.25	.69021	155.11	7.3757	898.23	210.70
#2	2169.9	263.69	-.03988	140.51	8.5414	892.12	213.11
#3	2173.8	263.49	-.36841	125.03	8.4652	888.42	212.40
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.2190	-4.6329	1235.4	4.3504	50.315	398.23	7.0274
SDev	.6113	2.4637	3.6	5.2401	.035	.46	6.0276
%RSD	50.146	53.178	.28787	120.45	.07009	.11603	85.773
#1	1.1537	-7.2128	1231.4	9.9313	50.307	397.71	13.754
#2	1.8603	-2.3048	1236.7	3.5845	50.284	398.40	2.1169
#3	.64296	-4.3809	1238.1	-.46471	50.353	398.60	5.2109
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	23.987	180.65					
SDev	.046	.55					
%RSD	.19171	.30589					
#1	23.934	180.02					
#2	24.012	181.07					
#3	24.016	180.84					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3463	--	--	--	--	--	--
SDev	8.164870	--	--	--	--	--	--
%RSD	.2357550	--	--	--	--	--	--
#1	3458	--	--	--	--	--	--
#2	3459	--	--	--	--	--	--
#3	3473	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CPAX5 XA Operator: THA
Run Time: 01/27/99 19:01:55
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.80534	8340.1	207.37	4.3211	145.96	.53042	3038.0
SDev	.05655	5.3	4.80	.6020	.35	.00106	8.6
%RSD	7.0222	.06354	2.3129	13.932	.23743	.19978	.28186
#1	.84874	8334.1	212.37	3.8615	146.30	.53018	3031.3
#2	.82589	8342.3	206.91	5.0026	145.97	.52950	3035.1
#3	.74138	8344.0	202.81	4.0993	145.60	.53158	3047.6
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.8051	16.417	22.336	27.601	14388.	2028.2	6.6690
SDev	.1448	.209	.195	.066	21.	24.3	.0660
%RSD	2.1277	1.2745	.87204	.23765	.14255	1.1995	.98993
#1	6.8137	16.179	22.123	27.528	14373.	2007.7	6.7025
#2	6.6562	16.572	22.506	27.622	14381.	2021.8	6.5929
#3	6.9454	16.500	22.379	27.654	14412.	2055.0	6.7115
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2141.4	252.77	.12742	156.76	8.1979	752.52	200.01
SDev	1.1	.72	.08585	11.07	.6084	2.16	2.13
%RSD	.05184	.28332	67.372	7.0649	7.4214	.28742	1.0640
#1	2142.6	252.21	.08846	168.73	8.2275	754.94	201.04
#2	2140.6	252.53	.22584	146.89	8.7910	750.77	201.42
#3	2140.8	253.58	.06797	154.66	7.5753	751.86	197.56
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.9323	4.9927	889.94	1.2193	45.662	394.60	3.0709
SDev	2.4755	4.6768	2.34	7.7993	.061	.04	11.525
%RSD	84.420	93.674	.26311	639.64	.13413	.00944	375.28
#1	.19975	9.8754	887.46	-7.7346	45.726	394.58	15.070
#2	5.0251	.55331	892.11	4.8594	45.656	394.58	2.0557
#3	3.5722	4.5494	890.25	6.5331	45.604	394.65	-7.9125
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	25.673	134.12					
SDev	.097	.83					
%RSD	.37916	.61643					
#1	25.786	133.45					
#2	25.612	133.87					
#3	25.622	135.04					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3640	--	--	--	--	--	--
SDev	8.059116	--	--	--	--	--	--
%RSD	.2213788	--	--	--	--	--	--
#1	3638	--	--	--	--	--	--
#2	3649	--	--	--	--	--	--
#3	3634	--	--	--	--	--	--

Method: ICP3Y Sample Name: CPAX6 Operator: THA
Run Time: 01/27/99 19:05:22
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.2353	7530.5	159.16	5.3068	143.52	.48390	4191.7
SDev	.2251	1.6	4.95	.3779	.03	.00264	8.4
%RSD	18.224	.02127	3.1095	7.1210	.02007	.54528	.20135
#1	1.4771	7528.7	162.39	5.4679	143.55	.48693	4194.4
#2	1.1968	7530.9	153.47	5.5776	143.49	.48265	4198.4
#3	1.0319	7531.9	161.64	4.8751	143.53	.48211	4182.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.2751	15.612	26.285	21.683	15671.	1747.8	6.2310
SDev	.2172	.377	.345	.113	15.	36.3	.1471
%RSD	3.4615	2.4123	1.3118	.52084	.09845	2.0769	2.3610
#1	6.4307	15.965	26.362	21.766	15676.	1769.1	6.3350
#2	6.3676	15.655	26.585	21.728	15683.	1768.5	6.2954
#3	6.0269	15.215	25.908	21.554	15654.	1705.9	6.0627
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2100.9	270.16	-.20342	142.91	8.5227	1048.8	173.55
SDev	2.3	.22	1.01854	79.00	.5896	3.7	1.24
%RSD	.11054	.08221	500.72	55.280	6.9179	.35490	.71428
#1	2102.3	270.14	.95935	202.25	8.6832	1049.9	172.91
#2	2102.2	270.39	-.63177	173.26	9.0155	1044.6	172.75
#3	2098.2	269.95	-.93783	53.237	7.8695	1051.7	174.97
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.46096	2.5495	948.21	3.4584	50.332	436.58	7.1764
SDev	1.0481	9.5188	1.48	.8784	.104	.09	2.1287
%RSD	227.38	373.35	.15601	25.401	.20594	.02087	29.663
#1	1.0522	9.9689	948.35	3.6910	50.215	436.49	9.3077
#2	1.0799	-8.1830	949.61	4.1971	50.372	436.67	7.1712
#3	-.74922	5.8628	946.67	2.4870	50.411	436.57	5.0503
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	32.370	165.75
SDev	.398	.81
%RSD	1.2300	.49019
#1	32.455	166.65
#2	32.719	165.07
#3	31.936	165.52

Errors	LC Pass	LC Pass
High	10000.	10000.
Low	-1.0000	-2.0000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3617	--	--	--	--	--	--
SDev	26.75509	--	--	--	--	--	--
%RSD	.7396659	--	--	--	--	--	--
#1	3592	--	--	--	--	--	--
#2	3614	--	--	--	--	--	--
#3	3645	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CCV2 Operator: THA
Run Time: 01/27/99 19:08:48
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51447	5.0474	1.0380	.50706	.49983	.50631	20.430
SDev	.00354	.0343	.0572	.00968	.00092	.00033	.068
%RSD	.68770	.67933	5.5088	1.9097	.18452	.06520	.33121
#1	.51041	5.0078	.97274	.50292	.50067	.50659	20.353
#2	.51691	5.0665	1.0620	.51812	.49885	.50639	20.479
#3	.51608	5.0678	1.0793	.50013	.49998	.50594	20.458
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51663	.51581	.51051	.50577	5.1028	100.39	4.9522
SDev	.00220	.00224	.00206	.00032	.0159	.15	.0161
%RSD	.42686	.43355	.40276	.06324	.31254	.15133	.32566
#1	.51415	.51333	.50862	.50610	5.0951	100.29	4.9690
#2	.51838	.51767	.51021	.50577	5.1211	100.56	4.9369
#3	.51737	.51644	.51270	.50546	5.0922	100.31	4.9505
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.402	.50854	.50953	203.03	.51511	5.0927	.50730
SDev	.042	.00151	.00307	1.07	.00137	.0909	.00532
%RSD	.20829	.29708	.60205	.52533	.26572	1.7842	1.0489
#1	20.393	.50711	.51175	201.91	.51425	4.9894	.51323
#2	20.448	.51012	.51081	203.16	.51669	5.1606	.50573
#3	20.365	.50840	.50603	204.03	.51440	5.1279	.50294
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52413	5.0558	109.25	5.1337	.50276	.49977	5.1322
SDev	.01746	.0329	.15	.0674	.00019	.00065	.1285
%RSD	3.3316	.65156	.13687	1.3130	.03796	.13079	2.5032
#1	.54424	5.0209	109.08	5.1159	.50281	.49946	5.2253
#2	.51539	5.0601	109.36	5.0770	.50255	.50052	5.1856
#3	.51277	5.0864	109.30	5.2082	.50292	.49932	4.9856
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50268	.50944
SDev	.00094	.00489
%RSD	.18793	.95999
#1	.50170	.50381
#2	.50276	.51187
#3	.50358	.51264
Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3478	--	--	--	--	--	--
SDev	11.26120	--	--	--	--	--	--
%RSD	.3238227	--	--	--	--	--	--
#1	3490	--	--	--	--	--	--
#2	3467	--	--	--	--	--	--
#3	3476	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCB2 Operator: THA
Run Time: 01/27/99 19:12:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00005	.00093	-.02117	.00196	-.00019	-.00017	-.01251
SDev	.00023	.01263	.02109	.00069	.00000	.00011	.00585
%RSD	483.99	1361.0	99.618	35.417	.00000	66.686	46.743
#1	.00032	.00037	-.03510	.00155	-.00019	-.00011	-.01328
#2	-.00009	.01382	-.03150	.00156	-.00019	-.00030	-.01794
#3	-.00009	-.01141	.00309	.00276	-.00019	-.00010	-.00632
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00085	.00153	.00074	-.00085	-.00105	.04574	.00095
SDev	.00213	.00139	.00160	.00052	.00390	.05713	.00144
%RSD	250.32	90.497	216.86	61.742	372.71	124.90	151.51
#1	-.00159	.00310	-.00050	-.00024	.00346	.04234	.00253
#2	.00183	.00048	.00254	-.00115	-.00330	-.00961	.00064
#3	.00232	.00101	.00017	-.00115	-.00330	.10450	-.00031
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00350	.00011	-.00176	.31952	-.00100	-.01567	-.00896
SDev	.01223	.00029	.00190	1.1258	.00038	.02283	.01118
%RSD	348.94	269.29	108.25	352.35	37.515	145.73	124.75
#1	-.00068	-.00006	-.00373	1.4580	-.00143	-.04161	-.01326
#2	.00707	-.00006	.00006	-.79317	-.00078	.00136	-.01735
#3	-.01690	.00044	-.00160	.29372	-.00079	-.00675	.00373
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00593	-.01204	.01538	.01192	.00001	.00020	-.02419
SDev	.00895	.04454	.01115	.01526	.00010	.00031	.01215
%RSD	150.92	369.84	72.511	128.02	962.68	159.35	50.210
#1	-.00383	-.06347	.02803	-.00539	.00007	-.00016	-.03822
#2	.01376	.01367	.01112	.01770	.00007	.00037	-.01717
#3	.00787	.01367	.00698	.02345	-.00011	.00037	-.01719
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	.00070	-.00059					
SDev	.00064	.00038					
%RSD	91.018	65.050					
#1	.00031	-.00081					
#2	.00143	-.00015					
#3	.00035	-.00082					
Errors	LC Pass	LC Pass					
High	.01000	.02000					
Low	-.01000	-.02000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3459	--	--	--	--	--	--
SDev	2.660026	--	--	--	--	--	--
%RSD	.0769057	--	--	--	--	--	--
#1	3456	--	--	--	--	--	--
#2	3461	--	--	--	--	--	--
#3	3460	--	--	--	--	--	--

Method: ICP3Y Sample Name: CPA~~A~~7 x4 Operator: THA
Run Time: 01/27/99 19:15:53 2.3 50
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.84082	8792.6	221.51	5.6602	139.06	.59879	3610.7
SDev	.15660	13.6	9.44	.5457	.14	.01592	6.2
%RSD	18.625	.15431	4.2617	9.6408	.10189	2.6587	.17271
#1	1.0216	8780.7	210.99	5.1431	139.18	.61697	3605.3
#2	.75550	8807.4	224.29	6.2306	139.10	.59208	3617.5
#3	.74540	8789.6	229.25	5.6070	138.90	.58733	3609.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.8316	19.290	35.852	21.156	15081.	2571.8	7.5595
SDev	.2009	.285	.260	.232	20.	32.1	.0716
%RSD	3.4450	1.4773	.72568	1.0946	.13226	1.2499	.94676
#1	6.0131	19.615	35.882	21.404	15065.	2566.8	7.6328
#2	5.6158	19.085	36.095	21.118	15103.	2606.1	7.5557
#3	5.8661	19.169	35.578	20.945	15076.	2542.4	7.4899
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2423.5	294.08	.54812	193.87	9.2433	786.81	163.74
SDev	2.6	.68	.97976	60.22	.5723	5.41	1.93
%RSD	.10779	.23000	178.75	31.061	6.1913	.68707	1.1779
#1	2422.5	293.61	1.5208	255.80	8.8336	780.85	165.83
#2	2426.5	294.86	-.43861	135.52	8.9992	788.18	163.35
#3	2421.6	293.78	.56220	190.28	9.8972	791.39	162.04
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.80956	7.0841	1047.3	-.16433	48.922	417.75	8.0802
SDev	2.3691	5.2645	6.0	2.98793	.062	.51	4.5699
%RSD	292.64	74.315	.57270	1818.2	.12705	.12291	56.556
#1	.62530	4.7895	1052.4	2.3834	48.866	417.30	13.233
#2	-1.4621	3.3563	1048.9	.57663	48.989	418.31	4.5199
#3	3.2654	13.106	1040.7	-3.4530	48.912	417.64	6.4873
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	26.678	131.49					
SDev	.061	.51					
%RSD	.22931	.38938					
#1	26.748	130.96					
#2	26.647	131.98					
#3	26.639	131.55					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3443	--	--	--	--	--	--
SDev	32.44269	--	--	--	--	--	--
%RSD	.9422772	--	--	--	--	--	--
#1	3410	--	--	--	--	--	--
#2	3445	--	--	--	--	--	--
#3	3475	--	--	--	--	--	--

Analysis Report Wed 01-27-99 07:22:37 PM page 1

Method: ICP3Y Sample Name: CPAX8 Operator: THA
Run Time: 01/27/99 19:19:26
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52440	8023.1	208.62	5.9676	124.27	.47721	3321.6
SDev	.11612	17.6	3.40	.5349	.08	.01104	10.6
%RSD	22.143	.21903	1.6293	8.9636	.06828	2.3141	.31793
#1	.61765	8002.9	208.90	5.4965	124.19	.48347	3309.5
#2	.39434	8032.0	211.87	6.5491	124.27	.48370	3326.3
#3	.56120	8034.5	205.09	5.8571	124.36	.46446	3329.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.3307	21.021	35.744	21.305	13687.	2301.2	6.5495
SDev	.0470	.065	.131	.036	35.	3.1	.0488
%RSD	1.0859	.30729	.36750	.16955	.25727	.13324	.74542
#1	4.2779	21.093	35.887	21.330	13647.	2297.9	6.5105
#2	4.3463	20.968	35.629	21.321	13707.	2303.9	6.5337
#3	4.3680	21.001	35.717	21.264	13709.	2301.8	6.6042
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2245.0	292.22	.15454	142.18	8.2115	724.41	138.21
SDev	3.6	.80	.47482	23.87	.4875	6.01	.57
%RSD	.16046	.27473	307.25	16.787	5.9369	.83015	.41185
#1	2242.7	291.31	-.36653	143.95	8.0799	724.26	137.59
#2	2243.1	292.51	.26769	117.48	7.8033	718.48	138.32
#3	2249.1	292.83	.56256	165.12	8.7513	730.50	138.71
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.5235	-.76591	830.90	-1.6458	46.729	374.48	8.7894
SDev	1.9292	2.39670	3.29	2.3854	.052	.72	3.4711
%RSD	76.451	312.92	.39633	144.94	.11188	.19136	39.492
#1	3.5779	1.2311	827.09	-.00079	46.670	373.67	8.4730
#2	.29683	-.10509	832.84	-.55509	46.768	374.74	5.4873
#3	3.6957	-3.4237	832.76	-4.3816	46.749	375.03	12.408
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	24.081	110.50					
SDev	.155	.93					
%RSD	.64408	.83742					
#1	23.906	109.44					
#2	24.201	111.19					
#3	24.136	110.85					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3640	--	--	--	--	--	--
SDev	6.871792	--	--	--	--	--	--
%RSD	.1887695	--	--	--	--	--	--
#1	3645	--	--	--	--	--	--
#2	3632	--	--	--	--	--	--
#3	3643	--	--	--	--	--	--

Analysis Report 2-3-99 XA Wed 01-27-99 07:26:10 PM page 1

Method: ICP3Y Sample Name: CPAX9 Operator: THA
Run Time: 01/27/99 19:22:59
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.1427	9317.6	232.10	5.5385	143.52	.59786	3316.5
SDev	.1531	15.5	15.24	.7328	.28	.01207	10.2
%RSD	13.397	.16669	6.5667	13.232	.19830	2.0190	.30725
#1	1.2989	9302.1	225.97	4.7407	143.85	.61166	3305.0
#2	.99296	9333.1	220.89	6.1817	143.37	.59267	3324.4
#3	1.1363	9317.7	249.46	5.6932	143.34	.58926	3320.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.9355	11.327	33.775	20.411	15873.	2624.8	8.0109
SDev	.0524	.294	.080	.178	25.	18.7	.1626
%RSD	.75548	2.5979	.23710	.87191	.15891	.71266	2.0291
#1	6.9737	11.622	33.727	20.615	15845.	2636.0	8.1784
#2	6.8758	11.324	33.731	20.285	15895.	2635.2	8.0006
#3	6.9571	11.034	33.868	20.334	15877.	2603.2	7.8538
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2409.5	288.14	.43928	195.97	9.2844	843.40	163.04
SDev	1.9	.57	.14104	28.05	.1299	7.88	3.58
%RSD	.07734	.19724	32.106	14.316	1.3990	.93385	2.1930
#1	2407.4	287.59	.43668	227.86	9.3757	851.82	160.12
#2	2410.6	288.72	.29957	184.96	9.1357	836.21	167.03
#3	2410.6	288.12	.58161	175.10	9.3417	842.17	161.96
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.2919	-1.0235	873.15	4.4507	47.535	425.63	3.0412
SDev	1.9603	2.2054	3.63	3.1373	.076	.13	8.9170
%RSD	85.532	215.46	.41616	70.490	.16045	.03125	293.20
#1	3.0212	.58025	877.32	1.0567	47.619	425.66	-3.0705
#2	3.7830	-.11243	870.64	5.0508	47.515	425.75	-1.0791
#3	.07149	-3.5385	871.50	7.2446	47.471	425.49	13.273
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	28.736	150.19					
SDev	.067	.66					
%RSD	.23316	.43861					
#1	28.678	149.45					
#2	28.809	150.42					
#3	28.721	150.71					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3507	--	--	--	--	--	--
SDev	12.71612	--	--	--	--	--	--
%RSD	.3626022	--	--	--	--	--	--
#1	3502	--	--	--	--	--	--
#2	3498	--	--	--	--	--	--
#3	3521	--	--	--	--	--	--

Analysis Report 2-3421 XA Wed 01-27-99 07:29:38 PM page 1

Method: ICP3Y Sample Name: CPAAA Operator: THA
Run Time: 01/27/99 19:26:27
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.76378	8346.9	171.57	5.6947	129.47	.50562	3284.3
SDev	.11766	23.2	10.99	.9803	.24	.01372	3.5
%RSD	15.405	.27844	6.4057	17.214	.18336	2.7131	.10623
#1	.85844	8323.2	164.42	4.7787	129.22	.52146	3282.0
#2	.63205	8347.8	166.06	5.5768	129.51	.49767	3282.6
#3	.80084	8369.7	184.22	6.7286	129.68	.49772	3288.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.4087	10.676	21.495	21.681	14280.	2380.9	7.0981
SDev	.1476	.079	.183	.054	22.	19.1	.0948
%RSD	2.3024	.74228	.85143	.24906	.15680	.80108	1.3355
#1	6.5659	10.754	21.632	21.662	14261.	2402.9	7.1429
#2	6.3869	10.595	21.566	21.742	14275.	2371.1	6.9892
#3	6.2732	10.680	21.287	21.640	14305.	2368.7	7.1622
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2282.5	275.78	.16575	130.64	8.5842	745.18	151.15
SDev	2.7	.42	.89938	39.60	.3360	8.38	.30
%RSD	.12037	.15340	542.62	30.312	3.9140	1.1247	.19891
#1	2281.3	275.52	.81346	176.19	8.4082	753.61	150.85
#2	2280.6	275.55	-.86112	104.41	8.3728	745.09	151.14
#3	2285.7	276.27	.54490	111.32	8.9716	736.85	151.46
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.9008	-4.0853	805.37	2.5558	47.790	373.56	2.6976
SDev	.7858	4.1566	3.91	1.6751	.124	.69	8.3163
%RSD	27.088	101.74	.48546	65.542	.25901	.18512	308.28
#1	3.8016	-2.7818	803.33	2.2291	47.666	372.92	-2.5503
#2	2.3561	-.73668	809.88	4.3702	47.793	373.47	-1.6430
#3	2.5448	-8.7374	802.90	1.0681	47.913	374.29	12.286
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	25.133	148.11					
SDev	.120	.31					
%RSD	.47730	.20932					
#1	25.007	148.11					
#2	25.245	147.79					
#3	25.147	148.41					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3620	--	--	--	--	--	--
SDev	19.69992	--	--	--	--	--	--
%RSD	.5442188	--	--	--	--	--	--
#1	3597	--	--	--	--	--	--
#2	3629	--	--	--	--	--	--
#3	3633	--	--	--	--	--	--

Analysis Report Wed 01-27-99 07:33:10 PM page 1

Method: ICP3Y Sample Name: CPAXC Operator: THA
Run Time: 01/27/99 19:29:59
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.1048	7430.5	336.56	4.5489	121.60	.51119	3704.3
SDev	.1451	9.5	8.54	.3604	.09	.01503	4.9
%RSD	13.130	.12838	2.5387	7.9237	.07404	2.9404	.13311
#1	1.1931	7422.2	332.05	4.4748	121.52	.52110	3702.2
#2	1.1840	7440.9	331.21	4.2313	121.58	.51858	3709.9
#3	.93742	7428.4	346.41	4.9406	121.70	.49390	3700.7
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.2692	8.8113	33.294	22.538	12934.	1841.2	6.1670
SDev	.1371	.3066	.433	.093	13.	45.6	.1417
%RSD	1.8854	3.4793	1.3004	.41076	.09750	2.4772	2.2977
#1	7.4275	9.0231	33.694	22.511	12924.	1820.9	6.2212
#2	7.1901	8.9511	33.356	22.641	12948.	1893.4	6.2735
#3	7.1901	8.4598	32.834	22.461	12928.	1809.3	6.0061
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2117.4	249.56	.89434	138.13	8.5869	1018.0	204.76
SDev	2.0	.46	.38020	14.66	.5607	7.0	4.20
%RSD	.09233	.18441	42.512	10.614	6.5293	.68595	2.0502
#1	2118.0	249.05	1.3301	153.62	9.1848	1025.0	207.92
#2	2115.3	249.96	.62998	136.30	8.0730	1011.0	206.37
#3	2119.1	249.66	.72298	124.47	8.5029	1018.0	199.99
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.5725	-1.9021	1108.6	-.26423	45.974	349.62	7.7091
SDev	2.7521	4.5552	.5	5.58833	.045	.28	5.0452
%RSD	175.01	239.48	.04273	2114.9	.09811	.08112	65.445
#1	-1.5347	-3.8127	1108.8	6.1797	45.925	349.29	6.0914
#2	2.5493	-5.1910	1108.1	-3.7800	46.014	349.83	13.365
#3	3.7030	3.2973	1109.0	-3.1924	45.982	349.73	3.6712
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	22.713	167.65					
SDev	.130	.37					
%RSD	.57142	.22046					
#1	22.856	167.26					
#2	22.681	168.00					
#3	22.603	167.69					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3426	--	--	--	--	--	--
SDev	33.92249	--	--	--	--	--	--
%RSD	.9900842	--	--	--	--	--	--
#1	3396	--	--	--	--	--	--
#2	3420	--	--	--	--	--	--
#3	3463	--	--	--	--	--	--

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2-3-99

Method: ICP3Y Sample Name: CP~~AXD~~ XA Operator: THA
Run Time: 01/27/99 19:33:31
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.3823	16352.	92.253	8.9091	193.03	1.0525	19917.
SDev	.0674	44.	6.594	.7017	.27	.0155	108.
%RSD	1.5384	.26986	7.1480	7.8758	.14000	1.4698	.54089
#1	4.3725	16303.	97.746	9.5061	193.27	1.0678	19795.
#2	4.3203	16365.	94.074	8.1362	192.74	1.0368	19961.
#3	4.4541	16388.	84.940	9.0851	193.09	1.0529	19997.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	38.411	8.2052	19.178	110.57	21072.	4088.5	14.375
SDev	.203	.1952	.123	.10	82.	15.0	.191
%RSD	.52800	2.3790	.64390	.09025	.39055	.36646	1.3257
#1	38.179	8.1776	19.289	110.45	20978.	4104.1	14.543
#2	38.548	8.0252	19.045	110.62	21110.	4074.3	14.168
#3	38.507	8.4126	19.200	110.63	21129.	4087.0	14.414
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7420.3	500.03	-.32643	251.65	16.075	724.90	1130.8
SDev	14.6	2.18	.74615	59.47	.595	9.86	6.4
%RSD	.19623	.43684	228.58	23.631	3.7008	1.3602	.56959
#1	7404.4	497.53	-.18099	236.47	16.158	716.38	1123.4
#2	7423.4	501.07	.33629	317.24	15.443	722.62	1134.7
#3	7433.1	501.51	-1.1346	201.25	16.624	735.70	1134.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.1873	-3.1604	648.46	2.5097	45.951	419.63	25.285
SDev	1.2355	6.6261	2.23	1.7023	.016	.87	14.301
%RSD	15.090	209.66	.34361	67.827	.03422	.20819	56.558
#1	7.2313	-9.1177	647.38	2.4925	45.955	418.64	34.550
#2	7.7483	-4.3396	646.97	.81614	45.933	419.95	8.8148
#3	9.5823	3.9761	651.02	4.2205	45.964	420.30	32.490
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	44.337	307.28					
SDev	.038	2.76					
%RSD	.08478	.89891					
#1	44.325	304.17					
#2	44.306	308.24					
#3	44.379	309.43					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3507	--	--	--	--	--	--
SDev	11.15961	--	--	--	--	--	--
%RSD	.3182120	--	--	--	--	--	--
#1	3519	--	--	--	--	--	--
#2	3497	--	--	--	--	--	--
#3	3505	--	--	--	--	--	--

Analysis Report 2-3-99 Wed 01-27-99 07:40:12 PM page 1

Method: ICP3Y Sample Name: CPAXE x4 Operator: THA
Run Time: 01/27/99 19:37:02
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.33109	11964.	17.913	9.9586	89.659	.68542	21893.
SDev	.24188	10.	6.965	.9748	.209	.00959	117.
%RSD	73.055	.08564	38.882	9.7884	.23333	1.3999	.53405
#1	.57630	11962.	9.9233	8.9615	89.863	.67578	21843.
#2	.09269	11954.	21.111	10.005	89.669	.68552	21809.
#3	.32427	11974.	22.704	10.909	89.445	.69497	22026.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.9260	11.323	80.084	95.546	30463.	1611.4	26.934
SDev	.2037	.212	.391	.397	87.	8.5	.280
%RSD	6.9605	1.8693	.48787	.41575	.28524	.52756	1.0401
#1	2.6999	11.568	80.274	95.953	30442.	1621.1	27.179
#2	2.9831	11.192	79.635	95.525	30388.	1605.7	26.994
#3	3.0951	11.210	80.344	95.160	30558.	1607.3	26.628
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8780.9	476.62	.55966	111.88	36.960	847.99	161.78
SDev	11.0	1.49	1.5254	63.14	.535	3.59	3.37
%RSD	.12503	.31296	272.56	56.439	1.4478	.42352	2.0826
#1	8783.0	476.03	2.0252	172.32	37.573	849.92	157.92
#2	8769.1	475.51	.67309	46.338	36.583	850.21	163.27
#3	8790.8	478.32	-1.0193	116.98	36.725	843.85	164.15
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0484	3.6461	1081.0	3.5737	34.695	90.710	32.379
SDev	1.1406	6.8903	5.8	6.1045	.077	.207	8.195
%RSD	108.79	188.98	.53215	170.82	.22224	.22792	25.308
#1	-.14741	11.339	1080.3	-3.4629	34.772	90.618	22.917
#2	2.1242	1.5590	1075.6	6.7317	34.695	90.566	37.110
#3	1.1685	-1.9594	1087.1	7.4523	34.617	90.947	37.111
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	22.101	393.54
SDev	.226	3.29
%RSD	1.0214	.83615
#1	22.351	391.56
#2	22.040	391.71
#3	21.912	397.33

Errors	LC Pass	LC Pass
High	10000.	10000.
Low	-1.0000	-2.0000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3481	--	--	--	--	--	--
SDev	32.09600	--	--	--	--	--	--
%RSD	.9221148	--	--	--	--	--	--
#1	3457	--	--	--	--	--	--
#2	3517	--	--	--	--	--	--
#3	3467	--	--	--	--	--	--

Analysis Report 2.34 Wed 01-27-99 07:43:43 PM page 1

Method: ICP3Y Sample Name: CPAXF Operator: THA
Run Time: 01/27/99 19:40:33
Comment:
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.40762	19566.	19.120	31.014	365.27	.77661	12545.
SDev	.25480	46.	5.540	.961	.62	.01120	84.
%RSD	62.509	.23424	28.972	3.0982	.16887	1.4425	.66804
#1	.67773	19545.	21.346	29.906	365.85	.76832	12509.
#2	.37358	19619.	12.814	31.613	364.62	.77216	12640.
#3	.17155	19535.	23.201	31.524	365.32	.78936	12485.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.09553	11.037	58.776	29.519	25410.	3241.9	30.684
SDev	.25051	.218	.366	.142	103.	40.3	.088
%RSD	262.24	1.9715	.62254	.47957	.40435	1.2419	.28830
#1	-.34609	11.049	59.057	29.683	25374.	3273.0	30.784
#2	.15492	11.248	58.909	29.441	25526.	3256.4	30.615
#3	-.09541	10.813	58.363	29.434	25330.	3196.4	30.652
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	11497.	432.70	-.20635	630.18	67.137	508.12	18.965
SDev	25.	1.93	1.25642	103.28	.701	13.60	.994
%RSD	.22003	.44643	608.88	16.388	1.0441	2.6756	5.2389
#1	11483.	431.81	1.2442	731.80	66.675	523.78	19.980
#2	11527.	434.92	-.95279	633.40	67.943	499.29	18.922
#3	11483.	431.38	-.91049	525.32	66.792	501.29	17.994
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.6184	7.3330	685.48	.44959	93.160	304.47	34.022
SDev	2.8460	6.6905	5.23	6.6962	.086	.50	15.398
%RSD	50.655	91.239	.76316	1489.4	.09280	.16285	45.259
#1	6.4756	.10122	690.05	-3.7020	93.247	304.42	32.959
#2	7.9373	8.5952	686.63	-3.1238	93.074	304.99	19.183
#3	2.4423	13.302	679.77	8.1745	93.159	304.01	49.925
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	57.089	81.907					
SDev	.323	.296					
%RSD	.56634	.36116					
#1	57.341	81.849					
#2	57.202	82.228					
#3	56.725	81.645					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3456	--	--	--	--	--	--
SDev	49.63240	--	--	--	--	--	--
%RSD	1.435978	--	--	--	--	--	--
#1	3435	--	--	--	--	--	--
#2	3421	--	--	--	--	--	--
#3	3513	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CPAXG (XA) Operator: THA
Run Time: 01/27/99 19:44:03
Comment: see rerun on 0127H run
Mode: CONC Corr. Factor: 100 For Dil for Fe, take Be, K, Na From this 1X, run for better Det. Limit No Fe JEC
THA 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.039	2010.4	442.52	2.2672	42.625	.30871	30267.
SDev	.709	3.0	3.53	1.3558	.145	.02005	169.
%RSD	2.0245	.15149	.79823	59.799	.33937	6.4933	.55903
#1	35.765	2007.5	444.55	2.1358	42.787	.32722	30147.
#2	35.005	2013.5	444.58	3.6839	42.507	.31148	30461.
#3	34.347	2010.3	438.44	.98191	42.582	.28742	30193.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K (No Fe JEC)	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	18.969	4.6313	10.508	952.42	H127810.	1061.4	5.2531
SDev	.412	.2000	.035	2.67	553.	35.1	.1713
%RSD	2.1698	4.3194	1.3789	.28080	.43286	3.3046	3.2607
#1	18.511	4.8617	10.492	955.49	H127550.	1027.4	5.4439
#2	19.308	4.5015	10.734	951.14	H128140.	1097.4	5.2030
#3	19.088	4.5306	10.508	950.62	H127430.	1059.3	5.1125
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2614.2	1136.9	L-6.0711	149.59	12.486	577.01	7498.2
SDev	8.1	3.9	2.0835	86.32	1.914	19.28	55.9
%RSD	.30834	.34020	34.319	57.702	15.332	3.3409	.74526
#1	2615.3	1134.2	L-3.6723	96.687	14.070	599.07	7445.9
#2	2621.7	1141.3	L-7.4296	249.19	10.359	568.55	7557.1
#3	2605.7	1135.2	L-7.1113	102.89	13.028	563.42	7491.5
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn (NR)	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.369	-7.0853	1018.3	L-18.566	42.896	51.535	171.76
SDev	.800	14.9020	.4	15.664	.127	.246	20.48
%RSD	4.1307	210.32	.04300	84.370	.29712	.47810	11.927
#1	19.936	4.6694	1017.9	-.65823	43.031	51.552	184.56
#2	19.716	L-23.846	1018.2	L-29.722	42.778	51.773	148.13
#3	18.454	-2.0796	1018.7	L-25.317	42.879	51.281	182.59
Errors	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	8.6240	2869.0					
SDev	.3477	19.5					
%RSD	4.0321	.68136					
#1	9.0238	2852.1					
#2	8.3919	2890.4					
#3	8.4563	2864.5					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3215	--	--	--	--	--	--
SDev	28.71711	--	--	--	--	--	--
%RSD	.8933197	--	--	--	--	--	--
#1	3222	--	--	--	--	--	--
#2	3183	--	--	--	--	--	--
#3	3239	--	--	--	--	--	--

2-3-99

THA 1-28-99

Analysis Report Wed 01-27-99 07:50:42 PM page 1

Method: ICP3Y Sample Name: CP~~AX~~H X4 Operator: THA
Run Time: 01/27/99 19:47:33
Comment:
Mode: CONC Corr. Factor: 100

Di 2 for 2n on 0127H run
Take all other results from 1X this run.

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.1190	25913.	59.799	133.09	414.38	.47130	42945.
SDev	.1146	13.	8.767	.92	.80	.01091	107.
%RSD	1.4118	.04905	14.661	.69023	.19284	2.3154	.24967
#1	8.0737	25900.	64.733	132.76	415.24	.47861	42822.
#2	8.0341	25925.	49.677	134.12	414.23	.47654	42993.
#3	8.2494	25914.	64.988	132.37	413.66	.45876	43020.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	394.90	20.014	63.480	275.18	10848.	38787.	38.732
SDev	2.31	.305	.350	.38	18.	59.	.250
%RSD	.58470	1.5253	.55057	.13990	.16485	.15206	.64468
#1	392.55	20.365	63.268	275.62	10827.	38841.	38.999
#2	394.99	19.806	63.884	275.01	10856.	38724.	38.692
#3	397.17	19.873	63.289	274.91	10860.	38796.	38.505
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5803.3	393.26	18.718	43985.	23.141	4130.4	4095.4
SDev	6.1	.67	.249	193.	.653	14.9	6.1
%RSD	.10573	.17011	1.3292	.43967	2.8210	.36003	.14794
#1	5796.4	392.55	18.434	44208.	23.814	4146.8	4092.2
#2	5805.9	393.33	18.823	43856.	22.511	4117.9	4091.6
#3	5807.8	393.89	18.897	43892.	23.096	4126.3	4102.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	186.40	4.0378	1420.4	303.02	147.17	2299.8	-15.664
SDev	3.91	9.7610	5.1	6.82	.17	.7	8.027
%RSD	2.0959	241.74	.35819	2.2520	.11870	.02994	51.241
#1	182.02	9.3079	1415.3	301.15	147.32	2300.0	-9.5976
#2	187.66	-7.2255	1420.4	297.33	147.22	2300.4	-12.630
#3	189.52	10.031	1425.5	310.58	146.98	2299.1	-24.766
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	26.659	H17517.					
SDev	.082	59.					
%RSD	.30879	.33669					
#1	26.611	H17453.					
#2	26.755	H17531.					
#3	26.613	H17568.					
Errors	LC Pass	LC High					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3368	--	--	--	--	--	--
SDev	5.444580	--	--	--	--	--	--
%RSD	.1616618	--	--	--	--	--	--
#1	3364	--	--	--	--	--	--
#2	3374	--	--	--	--	--	--
#3	3365	--	--	--	--	--	--

see 0127H run for ~~Ex~~ DI2

2-3-97

Method: ICP3Y Sample Name: CCV3 Operator: THA
Run Time: 01/27/99 19:51:03
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51983	5.0534	1.0285	.50727	.49644	.50853	20.653
SDev	.00394	.0225	.0143	.00914	.00028	.00083	.066
%RSD	.75774	.44615	1.3946	1.8013	.05669	.16293	.31793
#1	.52192	5.0327	1.0449	.51353	.49652	.50860	20.651
#2	.52228	5.0775	1.0184	.51150	.49667	.50932	20.719
#3	.51528	5.0500	1.0222	.49679	.49613	.50767	20.588
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52952	.51684	.51654	.50328	5.1229	100.58	4.9266
SDev	.00533	.00464	.00110	.00089	.0144	.62	.0069
%RSD	1.0062	.89823	.21288	.17662	.28129	.62028	.14017
#1	.53434	.51907	.51609	.50361	5.1294	100.96	4.9196
#2	.53042	.51995	.51779	.50395	5.1330	100.93	4.9267
#3	.52380	.51151	.51574	.50227	5.1064	99.863	4.9334
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.441	.51432	.51092	203.92	.52185	5.1086	.53034
SDev	.049	.00163	.00743	1.49	.01072	.0676	.02177
%RSD	.24114	.31739	1.4553	.72959	2.0548	1.3234	4.1053
#1	20.406	.51545	.50813	205.58	.52859	5.0805	.52688
#2	20.498	.51505	.51935	203.49	.52748	5.1857	H.55364
#3	20.420	.51244	.50529	202.70	.50949	5.0595	.51051
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50426	5.0758	110.37	5.1046	.50196	.49866	5.1138
SDev	.00647	.1698	.38	.0633	.00087	.00167	.0994
%RSD	1.2823	3.3452	.34282	1.2404	.17322	.33473	1.9434
#1	.50019	4.9828	110.47	5.0408	.50110	.49945	5.1219
#2	.50087	5.2718	110.69	5.1675	.50284	.49979	5.2088
#3	.51172	4.9728	109.95	5.1054	.50194	.49674	5.0106
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50678	.51784
SDev	.00272	.00342
%RSD	.53742	.66024
#1	.50684	.51763
#2	.50948	.52136
#3	.50403	.51453

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3493	--	--	--	--	--	--
SDev	20.32978	--	--	--	--	--	--
%RSD	.5820499	--	--	--	--	--	--
#1	3482	--	--	--	--	--	--
#2	3480	--	--	--	--	--	--
#3	3516	--	--	--	--	--	--

Analysis Report Wed 01-27-99 07:57:42 PM page 1

Method: ICP3Y Sample Name: CCB3 Operator: THA
Run Time: 01/27/99 19:54:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00131	-.00167	.00900	-.00236	-.00025	-.00063	-.02758
SDev	.00118	.01082	.02574	.00244	.00011	.00001	.00336
%RSD	90.205	649.45	285.89	103.60	43.335	1.4456	12.170
#1	-.00013	-.00877	.03505	-.00315	-.00038	-.00063	-.02975
#2	-.00131	-.00700	-.01641	-.00431	-.00019	-.00062	-.02928
#3	-.00250	.01078	.00836	.00038	-.00019	-.00064	-.02372
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00095	.00033	-.00077	-.00029	.00222	-.10110	-.00092
SDev	.00080	.00208	.00116	.00089	.00193	.12166	.00141
%RSD	83.960	630.11	149.64	312.14	86.950	120.33	153.79
#1	-.00031	.00153	.00044	-.00117	.00331	-.01604	-.00123
#2	-.00069	.00153	-.00089	-.00029	-.00001	-.24046	-.00215
#3	-.00184	-.00207	-.00187	.00061	.00336	-.04681	.00062
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00450	.00025	.00017	.03868	-.00166	.01333	-.01101
SDev	.00542	.00038	.00173	.54947	.00217	.02262	.01062
%RSD	120.48	152.97	1029.2	1420.5	130.22	169.76	96.448
#1	.00108	-.00008	-.00007	.40828	-.00293	-.00437	-.00692
#2	-.00974	.00016	.00200	-.59273	.00084	.03882	-.00305
#3	-.00483	.00067	-.00143	.30050	-.00290	.00553	-.02307
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00122	-.04345	.01115	-.01878	.00012	.00018	.02053
SDev	.01798	.03359	.01711	.00332	.00020	.00081	.03296
%RSD	1470.0	77.314	153.47	17.688	172.27	452.09	160.60
#1	-.01870	-.02745	.02737	-.02262	.00023	.00088	.03430
#2	.01626	-.08205	.01280	-.01684	-.00011	-.00070	.04437
#3	.00611	-.02085	-.00673	-.01688	.00023	.00036	-.01709
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00000	-.00062
SDev	.00061	.00044
%RSD	913010.	70.357
#1	.00034	-.00041
#2	.00037	-.00112
#3	-.00071	-.00032

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3530	--	--	--	--	--	--
SDev	18.26979	--	--	--	--	--	--
%RSD	.5175761	--	--	--	--	--	--
#1	3536	--	--	--	--	--	--
#2	3544	--	--	--	--	--	--
#3	3509	--	--	--	--	--	--

Analysis Report Wed 01-27-99 08:05:35 PM page 1

Method: ICP3Y Sample Name: CPA~~X~~4J Operator: THA
Run Time: 01/27/99 20:02:25
Comment:
Mode: CONC Corr. Factor: 100

DL for Zn at end of this run
take all others from this run
For better Det. Limits

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.118	3509.7	14.739	.87871	20.469	.48626	11883.
SDev	.060	8.6	8.406	.44188	.087	.01211	70.
%RSD	.45560	.24468	57.033	50.288	.42643	2.4898	.58927
#1	13.050	3499.9	9.7449	.97689	20.519	.49298	11802.
#2	13.142	3516.1	10.028	1.2632	20.519	.49351	11917.
#3	13.163	3513.2	24.444	.39599	20.368	.47228	11929.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.830	8.5134	50.566	6751.7	21215.	1986.8	2.4513
SDev	.214	.3688	.109	17.0	77.	26.3	.1166
%RSD	.79728	4.3318	.21621	.25249	.36250	1.3217	4.7548
#1	27.074	8.5256	50.479	6765.1	21127.	1984.2	2.5187
#2	26.676	8.1386	50.689	6757.5	21268.	2014.3	2.5186
#3	26.740	8.8759	50.530	6732.5	21280.	1962.0	2.3167
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	369.90	166.56	3.6514	3021.3	4.5635	-25.825	2376.5
SDev	.29	.70	.8188	70.6	.6764	75.258	17.7
%RSD	.07801	.42087	22.424	2.3369	14.821	291.42	.74423
#1	370.22	165.77	4.5586	3025.3	5.2194	59.138	2357.3
#2	369.84	166.79	2.9672	3089.8	4.6028	L-52.501	2380.2
#3	369.66	167.11	3.4285	2948.7	3.8684	L-84.111	2392.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-1.4085	-2.2014	2752.9	-.74450	2.4800	15.967	26.371
SDev	1.5369	9.5303	16.3	2.75586	.0036	.113	2.118
%RSD	109.11	432.92	.59389	370.16	.14458	.70476	8.0317
#1	-1.2606	-3.6510	2734.5	-2.3338	2.4821	15.850	26.584
#2	-3.0140	-10.924	2765.9	2.4377	2.4820	16.074	24.155
#3	.04901	7.9706	2758.3	-2.3374	2.4758	15.979	28.375
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	2.0192	H23268.
SDev	.0743	150.
%RSD	3.6777	.64509
#1	2.0757	H23095.
#2	1.9351	H23345.
#3	2.0467	H23365.
Errors	LC Pass	LC High
High	10000.	10000.
Low	-1.0000	-2.0000

No IECs
Dil
at end of this
run
THA 1-27-99

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3334	--	--	--	--	--	--
SDev	4.737040	--	--	--	--	--	--
%RSD	.1420771	--	--	--	--	--	--
#1	3331	--	--	--	--	--	--
#2	3331	--	--	--	--	--	--
#3	3340	--	--	--	--	--	--

Analysis Report Wed 01-27-99 08:09:05 PM page 1

Method: ICP3Y Sample Name: CPA~~X~~1P SERDIL Operator: THA
Run Time: 01/27/99 20:05:55
Comment:
Mode: CONC Corr. Factor: 500

use this one

Elem	Ag	Al 107%	As	B	Ba	Be NC	Ca 108%
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.08951	9026.8	23.939	7.4706	171.63	.32491	5085.6
SDev	.40493	817.8	11.528	1.2024	15.49	.12539	446.6
%RSD	452.37	9.0593	48.155	16.095	9.0273	38.593	8.7809
#1	.23081	9954.8	28.375	8.5074	189.15	.46177	5590.0
#2	.04530	8713.9	10.852	6.1525	166.03	.29744	4926.0
#3	-.54465	8411.6	32.590	7.7521	159.72	.21554	4740.8
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	500000.	50000.	50000.	50000.	25000.	500000.
Low	-5.0000	-50.000	-50.000	-50.000	-5.0000	-1.0000	-100.00

Elem	Cd 94% NC	Co	Cr	Cu 109%	Fe 109%	K 104%	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.1273	11.649	18.995	29.332	16282.	2916.3	7.2253
SDev	.7468	2.002	1.917	2.703	1447.	382.3	1.2501
%RSD	23.880	17.186	10.091	9.2139	8.8851	13.109	17.302
#1	3.9865	12.722	20.457	32.433	17919.	3342.9	8.6414
#2	2.7612	12.886	19.704	28.089	15755.	2801.6	6.7602
#3	2.6342	9.3392	16.825	27.476	15173.	2604.5	6.2745
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	50000.	50000.	250000.	250000.	25000.
Low	-2.5000	-5.0000	-5.0000	-10.000	-50.000	-2500.0	-25.000

Elem	Mg 108%	Mn	Mo	Na NC	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2420.8	314.96	.43990	134.80	7.7088	1310.9	192.66
SDev	223.6	28.39	1.6484	188.96	2.1986	94.9	25.11
%RSD	9.2363	9.0143	374.72	140.18	28.520	7.2408	13.033
#1	2674.3	347.08	1.1379	184.26	5.5870	1420.5	221.11
#2	2336.7	304.58	1.6245	294.11	9.9768	1257.6	183.29
#3	2251.5	293.22	-1.4426	-73.977	7.5624	1254.7	173.58
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	50000.	50000.	1000000.	50000.	100000.	50000.
Low	-100.00	-5.0000	-10.000	-2500.0	-20.000	-150.00	-25.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-2.1738	-15.311	1479.7	-.95220	55.527	443.25	-12.570
SDev	4.9796	19.380	129.6	16.8960	5.039	39.19	18.359
%RSD	229.07	126.57	8.7599	1774.4	9.0744	8.8422	146.05
#1	-3.2512	.63276	1626.3	14.878	61.240	487.47	8.3880
#2	-6.5264	-9.6846	1432.6	-18.743	53.625	429.45	-25.807
#3	3.2563	-36.881	1380.3	1.0080	51.715	412.82	-20.291
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	107000.	50000.	25000.	50000.	50000.

Low	-30.000	-100.00	-250.00	-50.000	-25.000	-7.5000	-1000.0
Elem	V	Zn					
Units	ppm	ppm					
Avge	29.790	337.10					
SDev	3.515	29.14					
%RSD	11.798	8.6438					
#1	33.645	370.17					
#2	28.963	325.93					
#3	26.763	315.19					
Errors	LC Pass	LC Pass					
High	50000.	50000.					
Low	-5.0000	-10.000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3543	--	--	--	--	--	--
SDev	14.41345	--	--	--	--	--	--
%RSD	.4068132	--	--	--	--	--	--
#1	3528	--	--	--	--	--	--
#2	3544	--	--	--	--	--	--
#3	3557	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSA Operator: THA
Run Time: 01/27/99 20:09:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00248	488.29	-.00608	.01932	.00191	-.00002	480.43
SDev	.00201	.64	.09800	.00829	.00034	.00010	.56
%RSD	81.179	.13023	1612.4	42.912	17.565	574.47	.11562
#1	-.00119	487.60	-.01709	.02267	.00210	.00010	480.14
#2	-.00480	488.85	-.09811	.02540	.00152	-.00007	480.09
#3	-.00145	488.43	.09697	.00988	.00211	-.00008	481.07
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00538	.00171	.00537	-.00085	181.29	-.21948	.00124
SDev	.00114	.00137	.00246	.00057	.24	.22509	.00142
%RSD	21.124	80.540	45.788	66.480	.13308	102.55	114.29
#1	-.00407	.00327	.00725	-.00120	181.06	.00090	.00248
#2	-.00597	.00117	.00259	-.00020	181.26	-.44900	-.00031
#3	-.00609	.00068	.00626	-.00115	181.54	-.21036	.00155
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	527.18	.00119	-.00987	-.64981	.00405	-.00427	.02272
SDev	.79	.00015	.00531	.97113	.00661	.08551	.01269
%RSD	.14966	12.733	53.779	149.45	163.31	2002.8	55.864
#1	526.40	.00136	-.00567	.25433	.00940	.09079	.03676
#2	527.14	.00109	-.01583	-1.6763	-.00334	-.02867	.01935
#3	527.98	.00112	-.00810	-.52743	.00609	-.07493	.01206
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01820	-.01813	.00607	H.11168	.01932	.00214	.18169
SDev	.02704	.17567	.00444	.03956	.00005	.00005	.14238
%RSD	148.59	968.73	73.128	35.427	.26569	2.4279	78.364
#1	.02220	.04084	.00956	H.12710	.01935	.00210	.34493
#2	-.01062	L-.21571	.00107	.06672	.01926	.00220	.08319
#3	.04302	.12046	.00757	H.14121	.01936	.00213	.11694
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00219	-.00475
SDev	.00069	.00142
%RSD	31.430	29.798
#1	.00298	-.00512
#2	.00170	-.00595
#3	.00189	-.00319

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3522	--	--	--	--	--	--
SDev	9.156113	--	--	--	--	--	--
%RSD	.2599376	--	--	--	--	--	--
#1	3518	--	--	--	--	--	--
#2	3533	--	--	--	--	--	--
#3	3516	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSAB Operator: THA
Run Time: 01/27/99 20:12:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97458	486.97	1.8479	2.0436	.48194	.48900	473.49
SDev	.00203	.23	.1695	.0071	.00069	.00032	.72
%RSD	.20791	.04715	9.1743	.34980	.14229	.06523	.15221
#1	.97483	486.81	1.6548	2.0357	.48262	.48924	472.69
#2	.97244	486.86	1.9725	2.0457	.48125	.48864	473.68
#3	.97647	487.23	1.9164	2.0495	.48196	.48913	474.10
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97689	.45845	.47454	.48352	179.25	49.524	.99078
SDev	.00373	.00434	.00255	.00037	.20	.148	.00495
%RSD	.38204	.94618	.53758	.07700	.11157	.29795	.49947
#1	.97435	.45473	.47284	.48394	179.04	49.398	.99604
#2	.97515	.45741	.47331	.48325	179.27	49.487	.98622
#3	.98118	.46321	.47747	.48337	179.44	49.687	.99008
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	524.06	.46802	.91739	48.642	.93653	1.9060	1.0242
SDev	.37	.00122	.01397	.377	.00908	.0607	.0324
%RSD	.07044	.26114	1.5232	.77606	.97005	3.1847	3.1598
#1	523.78	.46737	.92237	48.894	.93900	1.8425	1.0608
#2	523.93	.46726	.90161	48.208	.92647	1.9634	1.0120
#3	524.48	.46943	.92819	48.823	.94413	1.9120	.99964
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.93339	4.7990	21.115	9.2213	.96375	.93085	9.4205
SDev	.00446	.0504	.063	.0574	.00081	.00044	.1878
%RSD	.47798	1.0502	.29797	.62266	.08461	.04725	1.9930
#1	.92900	4.7426	21.067	9.1910	.96444	.93047	9.5912
#2	.93792	4.8395	21.092	9.1854	.96285	.93075	9.4508
#3	.93325	4.8148	21.186	9.2875	.96397	.93133	9.2194
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.47073	.94751
SDev	.00065	.00288
%RSD	.13760	.30427
#1	.47133	.94854
#2	.47005	.94425
#3	.47082	.94973

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3552	--	--	--	--	--	--
SDev	3.164562	--	--	--	--	--	--
%RSD	.0890980	--	--	--	--	--	--
#1	3551	--	--	--	--	--	--
#2	3549	--	--	--	--	--	--
#3	3555	--	--	--	--	--	--

Analysis Report Wed 01-27-99 08:22:05 PM page 1

Method: ICP3Y Sample Name: CPXAJ 2X FOR Zn Operator: THA
Run Time: 01/27/99 20:18:54
Comment:
Mode: CONC Corr. Factor: 200

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.036	3528.6	14.778	.97935	20.476	.51210	12099.
SDev	.239	40.4	2.345	.57091	.273	.00158	127.
%RSD	1.8314	1.1445	15.866	58.295	1.3315	.30889	1.0480
#1	12.993	3568.6	15.192	1.3212	20.724	.51385	12222.
#2	13.293	3529.4	12.253	1.2966	20.519	.51169	12105.
#3	12.822	3487.9	16.887	.32027	20.184	.51076	11969.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	200000.	20000.	20000.	20000.	10000.	200000.
Low	-2.0000	-20.000	-20.000	-20.000	-2.0000	-.40000	-40.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.518	8.1682	50.907	6751.2	21773.	1923.5	2.2930
SDev	.636	.3859	.525	81.8	225.	50.0	.2897
%RSD	2.3112	4.7240	1.0319	1.2120	1.0316	2.6012	12.634
#1	28.217	8.5068	51.231	6835.7	21992.	1932.6	2.0548
#2	27.363	8.2498	51.189	6745.4	21783.	1968.4	2.6155
#3	26.973	7.7481	50.301	6672.4	21544.	1869.6	2.2088
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	20000.	20000.	20000.	100000.	100000.	10000.
Low	-1.0000	-2.0000	-2.0000	-5.0000	-20.000	-1000.0	-10.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	378.41	169.89	2.8397	2721.1	3.7827	L-197.09	2432.8
SDev	5.42	1.56	1.3230	160.1	1.2430	60.16	29.3
%RSD	1.4316	.91615	46.591	5.8840	32.861	30.523	1.2034
#1	384.42	171.48	2.5012	2823.2	5.1108	L-132.55	2463.8
#2	376.90	169.82	4.2990	2803.6	3.5903	L-251.60	2428.8
#3	373.91	168.37	1.7187	2536.6	2.6472	L-207.12	2405.7
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	200000.	20000.	20000.	400000.	20000.	40000.	20000.
Low	-40.000	-2.0000	-4.0000	-1000.0	-8.0000	-60.000	-10.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-4.2164	-1.4671	2863.0	-10.172	2.4581	16.089	20.066
SDev	10.2462	6.2225	19.5	11.144	.0216	.097	23.639
%RSD	243.00	424.13	.68149	109.56	.87927	.60360	117.81
#1	L-15.324	-8.6054	2882.6	L-21.163	2.4776	16.141	-.37612
#2	4.8651	1.3925	2862.8	-10.473	2.4619	16.150	14.623
#3	-2.1900	2.8116	2843.6	1.1196	2.4349	15.977	45.953
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	20000.	42800.	20000.	10000.	20000.	20000.

Low	-12.000	-40.000	-100.00	-20.000	-10.000	-3.0000	-400.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	1.7699	H24778.					
SDev	.1518	268.					
%RSD	8.5743	1.0831					
#1	1.7073	H25025.					
#2	1.9430	H24815.					
#3	1.6596	H24492.					
Errors	LC Pass	LC High					
High	20000.	20000.					
Low	-2.0000	-4.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3422	--	--	--	--	--	--
SDev	29.07471	--	--	--	--	--	--
%RSD	.8496468	--	--	--	--	--	--
#1	3396	--	--	--	--	--	--
#2	3417	--	--	--	--	--	--
#3	3453	--	--	--	--	--	--

RW 5f
TAA 1-27-99

Method: ICP3Y Sample Name: CPXAJ ~~5X FOR Zn~~ Al Operator: THA
Run Time: 01/27/99 20:24:08
Comment:
Mode: CONC Corr. Factor: 500 used for Zn only ml 2-3-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.607	3695.9	27.540	3.9645	21.350	.39393	12816.
SDev	2.040	585.8	8.716	4.4305	3.519	.14397	1995.
%RSD	14.990	15.850	31.648	111.76	16.481	36.546	15.565
#1	15.841	4369.2	19.920	8.4264	25.380	.52089	15109.
#2	13.135	3415.1	37.044	3.9011	19.782	.42339	11861.
#3	11.845	3303.3	25.657	-.43397	18.888	.23751	11479.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	500000.	50000.	50000.	50000.	25000.	500000.
Low	-5.0000	-50.000	-50.000	-50.000	-5.0000	-1.0000	-100.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	30.111	8.6482	54.131	7068.7	23179.	1914.7	2.0428
SDev	5.002	1.0514	8.473	1126.4	3638.	384.4	.7246
%RSD	16.612	12.157	15.653	15.935	15.695	20.074	35.470
#1	35.704	9.2424	63.822	8364.1	27359.	2330.0	2.2071
#2	28.561	9.2679	50.452	6523.6	21444.	1842.7	2.6712
#3	26.067	7.4343	48.119	6318.6	20733.	1571.5	1.2502
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	50000.	50000.	250000.	250000.	25000.
Low	-2.5000	-5.0000	-5.0000	-10.000	-50.000	-2500.0	-25.000

Elem	Mg	Mn	Mo	Na	Ni	P NR	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	393.55	179.85	-.97833	2446.3	2.0213	L-519.68	2572.9
SDev	61.54	29.50	1.36590	875.9	.6072	338.43	382.2
%RSD	15.638	16.404	139.61	35.805	30.040	65.123	14.855
#1	463.78	213.81	-2.4931	3394.8	2.2866	L-852.55	3010.8
#2	367.85	165.27	-.60143	2276.3	1.3266	L-530.52	2401.6
#3	349.03	160.48	.15954	1667.9	2.4507	L-175.95	2306.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	500000.	50000.	50000.	1000000.	50000.	100000.	50000.
Low	-100.00	-5.0000	-10.000	-2500.0	-20.000	-150.00	-25.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	12.699	-27.917	2992.0	-13.607	2.6507	16.888	7.1436
SDev	9.795	17.936	461.0	23.221	.3916	2.739	26.357
%RSD	77.134	64.249	15.408	170.66	14.772	16.219	368.96
#1	22.677	-17.583	3521.2	-35.898	3.0989	20.030	-.23729
#2	12.321	-17.539	2778.1	10.444	2.4783	15.636	36.404
#3	3.0978	-48.628	2676.9	-15.366	2.3749	15.000	-14.736
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	107000.	50000.	25000.	50000.	50000.

Low	-30.000	-100.00	-250.00	-50.000	-25.000	-7.5000	-1000.0
Elem	V	Zn					
Units	ppm	ppm					
Avge	1.2481	26959.					
SDev	.3199	4172.					
%RSD	25.633	15.475					
#1	1.0294	31746.					
#2	1.6153	25025.					
#3	1.0996	24105.					
Errors	LC Pass	LC Pass					
High	50000.	50000.					
Low	-5.0000	-10.000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3473	--	--	--	--	--	--
SDev	15.99994	--	--	--	--	--	--
%RSD	.4606653	--	--	--	--	--	--
#1	3460	--	--	--	--	--	--
#2	3469	--	--	--	--	--	--
#3	3491	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCV4 Operator: THA
Run Time: 01/27/99 20:27:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51986	5.1399	1.0225	.51839	.50230	.51237	20.848
SDev	.00333	.0172	.0178	.00559	.00051	.00065	.096
%RSD	.63979	.33369	1.7372	1.0785	.10090	.12713	.46159
#1	.51602	5.1205	1.0108	.51204	.50262	.51162	20.744
#2	.52181	5.1528	1.0429	.52260	.50257	.51264	20.867
#3	.52175	5.1465	1.0136	.52051	.50172	.51284	20.933
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52712	.51564	.51891	.50032	5.1796	101.24	4.9438
SDev	.00341	.00068	.00395	.00168	.0167	.49	.0220
%RSD	.64646	.13268	.76122	.33473	.32227	.48359	.44436
#1	.52507	.51494	.51584	.49847	5.1604	100.76	4.9688
#2	.52525	.51566	.51752	.50173	5.1872	101.73	4.9348
#3	.53106	.51631	.52337	.50077	5.1911	101.22	4.9278
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb NR
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.564	.51625	.51289	206.10	.51841	5.1548	.52268
SDev	.045	.00141	.00561	.55	.00608	.0691	.03095
%RSD	.22011	.27318	1.0937	.26885	1.1723	1.3410	5.9203
#1	20.521	.51479	.51757	205.79	.52019	5.2144	.48705
#2	20.611	.51637	.50667	205.77	.52339	5.0790	.53820
#3	20.560	.51760	.51443	206.74	.51164	5.1709	.54280
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.53669	5.0862	110.71	5.2074	.50710	.50185	5.0407
SDev	.01446	.0712	.66	.1542	.00018	.00124	.0349
%RSD	2.6939	1.3995	.59732	2.9609	.03470	.24772	.69203
#1	.52179	5.0835	109.96	5.2397	.50699	.50041	5.0800
#2	.53762	5.1587	110.98	5.0397	.50730	.50259	5.0288
#3	.55066	5.0164	111.20	5.3429	.50700	.50254	5.0134
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800
Elem	V	Zn					
Units	ppm	ppm					
Avge	.50992	.51864					
SDev	.00161	.00722					
%RSD	.31495	1.3928					
#1	.50905	.51379					
#2	.50895	.51518					
#3	.51178	.52694					
Errors	LC Pass	LC Pass					
High	.55200	.55200					
Low	.44800	.44800					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3447	--	--	--	--	--	--
SDev	20.37850	--	--	--	--	--	--
%RSD	.5911781	--	--	--	--	--	--
#1	3468	--	--	--	--	--	--
#2	3446	--	--	--	--	--	--
#3	3427	--	--	--	--	--	--

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Method: ICP3Y - Sample Name: CCB4 Operator: THA
Run Time: 01/27/99 20:31:09
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00047	.01229	.00980	.00036	-.00006	-.00017	.00083
SDev	.00227	.01244	.02833	.00120	.00023	.00010	.00796
%RSD	482.20	101.26	289.12	334.19	388.01	58.673	956.24
#1	.00158	.02383	.03787	.00034	.00020	-.00013	.00861
#2	-.00290	-.00089	.01030	-.00083	-.00019	-.00028	-.00730
#3	-.00008	.01392	-.01878	.00156	-.00019	-.00009	.00119
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00000	.00101	.00042	-.00024	.00687	-.06003	.00097
SDev	.00194	.00090	.00174	.00090	.00348	.27707	.00146
%RSD	233790.	89.144	415.16	372.60	50.653	461.59	151.62
#1	.00147	.00206	.00227	-.00022	.01038	.25928	.00256
#2	-.00220	.00050	-.00119	-.00116	.00342	-.20241	-.00031
#3	.00073	.00049	.00017	.00065	.00683	-.23695	.00064
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00685	.00028	-.00062	.50221	-.00219	.02467	-.00601
SDev	.00930	.00030	.00154	.25466	.00407	.01740	.01740
%RSD	135.72	106.68	247.54	50.708	186.11	70.536	289.47
#1	.01757	.00047	.00111	.79593	.00203	.04246	.00831
#2	.00106	-.00006	-.00115	.34335	-.00609	.02385	-.00096
#3	.00191	.00044	-.00183	.36733	-.00250	.00769	-.02538
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00244	-.01205	.02487	-.00141	.00013	-.00016	.00041
SDev	.00902	.02019	.02596	.04851	.00011	.00055	.03232
%RSD	369.23	167.49	104.40	3439.3	82.851	343.20	7943.3
#1	.00643	-.00053	.05483	.02983	.00025	.00039	.03573
#2	-.00216	-.00027	.01068	.02322	.00007	-.00070	-.02769
#3	-.01160	-.03537	.00909	-.05729	.00007	-.00016	-.00682
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	-.00101	-.00055
SDev	.00125	.00082
%RSD	124.31	147.99
#1	.00044	.00002
#2	-.00173	-.00018
#3	-.00174	-.00149

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3449	--	--	--	--	--	--
SDev	32.55294	--	--	--	--	--	--
%RSD	.9437362	--	--	--	--	--	--
#1	3413	--	--	--	--	--	--
#2	3476	--	--	--	--	--	--
#3	3459	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CPAX4~~X1~~ Operator: THA
Run Time: 01/27/99 20:37:40
Comment:
Mode: CONC Corr. Factor: 100

used this data THA 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.44719	8466.9	10.057	6.8116	162.81	.56396	4709.1
SDev	.08810	15.5	7.878	.1789	.73	.02060	13.4
%RSD	19.700	.18356	78.332	2.6266	.44874	3.6524	.28399
#1	.50632	8475.8	18.761	6.6670	163.58	.58548	4703.4
#2	.48930	8449.0	3.4142	6.7561	162.13	.56198	4699.5
#3	.34594	8476.1	7.9969	7.0117	162.73	.54442	4724.4
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.3437	10.712	17.911	26.951	14919.	2800.1	6.9650
SDev	.1531	.264	.211	.198	28.	32.9	.1260
%RSD	4.5788	2.4620	1.1783	.73475	.18688	1.1762	1.8090
#1	3.1754	11.016	18.154	27.177	14928.	2830.5	7.0648
#2	3.4746	10.559	17.767	26.873	14888.	2765.1	7.0067
#3	3.3812	10.559	17.813	26.805	14941.	2804.7	6.8234
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2237.3	291.83	.86635	208.25	9.6681	1199.0	175.28
SDev	5.4	.73	.55445	86.59	.4757	2.6	4.03
%RSD	.24127	.25098	63.998	41.580	4.9206	.21765	2.2993
#1	2236.2	291.86	.55913	296.52	10.217	1196.7	170.87
#2	2232.6	291.08	.53352	123.43	9.3681	1198.5	178.78
#3	2243.2	292.54	1.5064	204.81	9.4196	1201.8	176.19
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.24302	1.6988	1811.8	-1.5322	52.759	420.75	1.5302
SDev	2.60338	5.8455	28.4	3.7246	.156	1.60	4.7724
%RSD	1071.2	344.09	1.5688	243.09	.29572	.38048	311.89
#1	2.3709	4.7288	1810.1	-1.7059	52.909	422.03	-1.1524
#2	-2.8357	-5.0396	1784.2	2.2762	52.597	418.95	7.0403
#3	-.26429	5.4072	1841.0	-5.1669	52.770	421.26	-1.2973
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	27.701	303.56
SDev	.166	.74
%RSD	.60051	.24401
#1	27.809	302.72
#2	27.785	304.12
#3	27.510	303.84

Errors	LC Pass	LC Pass
High	10000.	10000.
Low	-1.0000	-2.0000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3471	--	--	--	--	--	--
SDev	15.84625	--	--	--	--	--	--
%RSD	.4565443	--	--	--	--	--	--
#1	3453	--	--	--	--	--	--
#2	3481	--	--	--	--	--	--
#3	3479	--	--	--	--	--	--

Method: ICP3Y - Sample Name: ICSA Operator: THA
Run Time: 01/27/99 20:41:11
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As NR	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00184	486.44	L-.12077	.02150	.00235	-.00008	474.56
SDev	.00150	1.17	.15302	.00290	.00011	.00019	.27
%RSD	81.439	.24152	126.70	13.487	4.5098	232.16	.05657
#1	-.00061	485.10	-.00818	.01964	.00229	.00010	474.26
#2	-.00350	487.29	L-.29500	.02001	.00229	-.00008	474.68
#3	-.00140	486.92	-.05914	.02484	.00247	-.00027	474.75
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00377	.00161	.00364	.00307	179.45	-.17534	.00062
SDev	.00275	.00254	.00150	.00147	.30	.11947	.00160
%RSD	72.851	157.54	41.074	47.771	.16487	68.136	259.64
#1	-.00611	.00284	.00353	.00477	179.11	-.03761	-.00123
#2	-.00074	.00331	.00220	.00221	179.62	-.23736	.00155
#3	-.00447	-.00131	.00519	.00224	179.62	-.25104	.00154
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	524.16	.00123	-.00495	-1.0719	-.00269	-.02726	.01930
SDev	1.16	.00015	.01056	.5406	.00820	.05891	.02830
%RSD	.22118	12.359	213.25	50.433	305.19	216.09	146.64
#1	522.85	.00133	.00145	-.68937	.00559	.00790	H.05082
#2	525.04	.00106	-.01715	-.83591	-.00284	.00559	.01101
#3	524.60	.00131	.00084	-1.6903	-.01080	-.09527	-.00393
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05042	-.04289	.03935	.03079	.01929	.00264	.25355
SDev	.05475	.09582	.05350	.16739	.00003	.00006	.08218
%RSD	108.59	223.40	135.95	543.60	.17311	2.1245	32.414
#1	.00570	.06758	.09137	.00849	.01932	.00257	.30777
#2	H.11148	-.10347	.04218	L-.12432	.01929	.00266	.29388
#3	.03408	-.09279	-.01551	H.20821	.01925	.00267	.15899
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00264	.01445
SDev	.00080	.00169
%RSD	30.393	11.732
#1	.00313	.01434
#2	.00172	.01619
#3	.00308	.01281

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3528	--	--	--	--	--	--
SDev	5.968166	--	--	--	--	--	--
%RSD	.1691494	--	--	--	--	--	--
#1	3523	--	--	--	--	--	--
#2	3528	--	--	--	--	--	--
#3	3535	--	--	--	--	--	--

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Method: ICP3Y Sample Name: ICSAB Operator: THA
Run Time: 01/27/99 20:44:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96876	482.80	1.7725	2.0399	.47916	.48940	473.92
SDev	.00197	.62	.0943	.0057	.00033	.00029	.96
%RSD	.20326	.12744	5.3231	.27779	.06868	.05933	.20230
#1	.96690	482.10	1.7929	2.0337	.47952	.48919	473.06
#2	.97083	483.09	1.8549	2.0413	.47888	.48929	473.76
#3	.96856	483.23	1.6696	2.0448	.47907	.48973	474.96
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96942	.45741	.46865	.47991	178.83	49.133	.98068
SDev	.00640	.00308	.00252	.00117	.29	.179	.00290
%RSD	.66050	.67325	.53800	.24375	.16036	.36412	.29557
#1	.97447	.46001	.47135	.47858	178.53	49.188	.98189
#2	.96222	.45401	.46636	.48078	178.88	48.933	.98278
#3	.97159	.45822	.46823	.48037	179.09	49.278	.97738
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	519.72	.46766	.92016	48.803	.92695	1.7679	1.0196
SDev	.77	.00088	.00548	.874	.01326	.0489	.0071
%RSD	.14807	.18852	.59569	1.7911	1.4308	2.7666	.69464
#1	518.83	.46787	.91582	48.359	.93274	1.7804	1.0277
#2	520.10	.46669	.92632	48.240	.93633	1.8094	1.0152
#3	520.22	.46842	.91833	49.810	.91177	1.7140	1.0157
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.89316	4.7212	21.051	9.2434	.95979	.92799	9.2508
SDev	.03405	.0233	.043	.1551	.00053	.00245	.1625
%RSD	3.8126	.49435	.20311	1.6775	.05517	.26348	1.7567
#1	.92871	4.6987	21.008	9.3988	.95945	.92555	9.1755
#2	.88994	4.7453	21.052	9.2426	.96040	.93044	9.4373
#3	.86084	4.7196	21.093	9.0887	.95951	.92797	9.1396
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.46949	.95058
SDev	.00165	.00676
%RSD	.35059	.71086
#1	.47100	.94382
#2	.46773	.95060
#3	.46973	.95733

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3588	--	--	--	--	--	--
SDev	8.924486	--	--	--	--	--	--
%RSD	.2487104	--	--	--	--	--	--
#1	3592	--	--	--	--	--	--
#2	3595	--	--	--	--	--	--
#3	3578	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCV5 Operator: THA
Run Time: 01/27/99 20:48:13
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51580	5.0699	1.0624	.51144	.50275	.50745	20.478
SDev	.00060	.0020	.0161	.00136	.00103	.00148	.054
%RSD	.11664	.03941	1.5177	.26555	.20510	.29189	.26244
#1	.51618	5.0688	1.0441	.51297	.50322	.50908	20.533
#2	.51511	5.0722	1.0683	.51039	.50347	.50706	20.425
#3	.51612	5.0688	1.0747	.51095	.50157	.50619	20.475
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51797	.51052	.51071	.50175	5.1227	101.19	4.9614
SDev	.00380	.00431	.00172	.00064	.0112	.11	.0091
%RSD	.73293	.84404	.33615	.12673	.21928	.10752	.18367
#1	.51860	.51431	.51233	.50206	5.1355	101.31	4.9555
#2	.51390	.50584	.50891	.50102	5.1181	101.10	4.9719
#3	.52141	.51142	.51090	.50217	5.1145	101.16	4.9568
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.458	.51011	.51521	205.52	.52490	5.0235	.52752
SDev	.062	.00110	.00973	.24	.00692	.0405	.01156
%RSD	.30425	.21549	1.8878	.11915	1.3180	.80630	2.1910
#1	20.530	.51105	.50410	205.27	.52893	5.0065	.54063
#2	20.427	.50890	.51935	205.75	.52885	4.9943	.51880
#3	20.418	.51038	.52218	205.54	.51691	5.0697	.52312
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51463	5.0267	109.61	5.1468	.50665	.49920	5.0586
SDev	.01054	.0557	.28	.0714	.00053	.00072	.1778
%RSD	2.0473	1.1089	.25458	1.3875	.10548	.14386	3.5139
#1	.50944	5.0832	109.90	5.1216	.50679	.50002	5.1466
#2	.52675	4.9717	109.35	5.2274	.50710	.49867	4.8540
#3	.50769	5.0252	109.58	5.0914	.50606	.49891	5.1753
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50437	.51731
SDev	.00105	.00078
%RSD	.20819	.15012
#1	.50486	.51716
#2	.50316	.51815
#3	.50508	.51662

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3464	--	--	--	--	--	--
SDev	25.36876	--	--	--	--	--	--
%RSD	.7323361	--	--	--	--	--	--
#1	3437	--	--	--	--	--	--
#2	3488	--	--	--	--	--	--
#3	3467	--	--	--	--	--	--

Analysis Report Wed 01-27-99 08:54:53 PM page 1

Method: ICP3Y Sample Name: CCB5 Operator: THA
Run Time: 01/27/99 20:51:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00049	.00853	-.00486	-.00082	.00000	-.00009	.00488
SDev	.00041	.00911	.04969	.00315	.00034	.00000	.00838
%RSD	82.834	106.80	1022.5	382.63	7812.5	4.6512	171.50
#1	-.00049	.01108	-.06215	.00037	-.00019	-.00009	.00566
#2	-.00090	-.00158	.02645	-.00440	-.00019	-.00009	-.00385
#3	-.00009	.01611	.02113	.00156	.00039	-.00010	.01284
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00132	.00032	-.00028	.00004	.00344	-.00351	.00157
SDev	.00015	.00211	.00225	.00052	.00339	.23069	.00001
%RSD	10.987	662.75	792.41	1229.0	98.565	6569.1	.48099
#1	.00132	-.00160	-.00220	.00064	.00344	.01392	.00158
#2	.00147	-.00002	-.00086	-.00027	.00005	-.24242	.00157
#3	.00118	.00257	.00220	-.00025	.00682	.21797	.00158
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01134	.00019	-.00044	.58987	.00011	-.00793	-.01109
SDev	.01329	.00051	.00247	.22681	.00353	.02334	.00639
%RSD	117.27	268.83	566.45	38.451	3346.3	294.37	57.605
#1	.01811	-.00031	-.00279	.71579	-.00102	.01900	-.01195
#2	-.00398	.00018	.00213	.32803	-.00273	-.02043	-.01702
#3	.01989	.00070	-.00065	.72578	.00407	-.02236	-.00432
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01958	-.01886	.02534	-.02274	.00013	-.00034	.00717
SDev	.00681	.03849	.01353	.01989	.00010	.00082	.01601
%RSD	34.804	204.01	53.386	87.464	81.875	239.37	223.25
#1	-.01369	-.05620	.03803	-.04570	.00007	-.00017	.00366
#2	-.02704	-.02106	.02688	-.01129	.00006	-.00124	-.00679
#3	-.01801	.02067	.01111	-.01122	.00024	.00037	.02464
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Analysis Report

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	-.00033	-.00042
SDev	.00064	.00106
%RSD	193.98	252.30
#1	-.00072	.00049
#2	.00041	-.00158
#3	-.00067	-.00017

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3472	--	--	--	--	--	--
SDev	14.00311	--	--	--	--	--	--
%RSD	.4032921	--	--	--	--	--	--
#1	3468	--	--	--	--	--	--
#2	3488	--	--	--	--	--	--
#3	3461	--	--	--	--	--	--

QUANTERRA-DENVER

ICP IDL -1998-qt 2

ICP-1 Effective 04/15/98

ICP-3 Effective 04/14/98

All units are mg/L

ANALYTE	IDL ICP-1	IDL ICP-3	MDL aqueous	MDL soil	QRL	CRDL	LINEAR RANGE ICP-1	LINEAR RANGE ICP-3
Aluminum	0.0324	0.0128	0.052	3.6	0.1	0.2	600	1000
Antimony	0.0257	0.035	0.02	4.8	0.06	0.06	100	100
Arsenic	0.0393	0.0563	0.027	5	0.1	Trace/GFAA	100	100
Barium	0.00186	0.00056	0.0018	0.57	0.01	0.2	100	100
Beryllium	0.00049	0.0002	0.00092	0.14	0.002	0.005	50	50
Boron	0.0578	0.00475	0.01	1.7	0.1	--	100	100
Cadmium	0.00424	0.00255	0.0034	0.22	0.005	0.005	100	100
Calcium	0.0825	0.0061	0.034	4.8	0.2	5	1000	1000
Chromium	0.00394	0.00276	0.0041	0.38	0.01	0.01	100	100
Cobalt	0.00412	0.00289	0.0035	0.79	0.01	0.05	100	100
Copper	0.0034	0.00199	0.0021	0.87	0.02	0.025	100	100
Iron	0.02	0.00467	0.026	1	0.1	0.1	500	500
Lead	0.0296	0.0264	0.019	3.6	0.05	Trace/GFAA	100	100
Lithium	0.00266	0.00281	0.005	0.5	0.05	--	50	50
Magnesium	0.0395	0.0181	0.07	5.1	0.2	5	1000	1000
Manganese	0.00509	0.00061	0.004	0.37	0.01	0.015	100	100
Molybdenum	0.00903	0.00679	0.0025	0.79	0.02	--	100	100
Nickel	0.00963	0.00838	0.0097	1.3	0.04	0.04	100	100
Phosphorus	0.117	0.0717	0.084	16	0.3	--	200	200
Potassium	0.136	0.339	0.5	50	5	5	500	500
Selenium	0.0674	0.062	0.073	6.7	0.2	Trace/GFAA	100	100
Silica (SiO_2)	0.0552	0.0237	0.16	17	0.5	--	428	428
Silicon	0.0287	0.0118	N/A	N/A	0.1	0.1	200	200
Silver	0.00484	0.00241	0.0025	0.29	0.01	0.01	100	100
Sodium	1.26	0.943	0.72	110	5	5	2000	2000
Strontium	0.0221	0.00273	0.012	1.2	0.05	--	50	50
Thallium	0.0812	0.0758	0.2	20	2	Trace/GFAA	100	100
Tin	0.00832	0.0775	0.01	4.9	0.1	--	100	100
Titanium	0.00201	0.00146	0.0015	0.17	0.015	--	20	100
Vanadium	0.00304	0.00176	0.0031	0.41	0.01	0.05	100	100
Zinc	0.00248	0.00158	0.014	0.68	0.02	0.02	100	100

ICP3 IEC LIST

IEC	WHAT THE IEC AFFECTS
AG	NONE
AL	AS, CA, FE, MG, MN, P, PB, SB
AS	CD
B	NONE
BA	NONE
BE	NONE
CA	CR, P
CD	CU
CO	AL, B, CD, CU, FE, NA, PB, SB, SE
CR	AS, FE, PB, SR, TI, V-
CU	MG, P, PB, ZN
FE	AG, AS, B, CA, CD, CO, CU, MG, MN, MO, NA, NI,P, PB, SN, TL,V,ZN
K	NONE
LI	NONE
MG	AL, AS, B, CD, FE, MO, P, PB, SB, SN, V, ZN
MN	AG, AL, CR, FE, MG, V
MO	AL, AS, B, BE, CD, CR, CU, MG, MN, P, SB, SIO2, V
NA	NONE
NI	CD, CO, MO, PB, SB, ZN
P	NONE
PB	NONE
SB	FE, NA, PB, SB
SE	NONE
SIO2	NONE
SN	SB
SR	NONE
TI	AG, AL, BE, CO, CU, FE, MG, NA, PB, SB, SN, TL
TL	NONE
V	AG, AL, AS, B, VE, CD, CR, FE, MN, SB, SIO2, TL
ZN	NA

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:15:04

BATCH NUMBER: 9011129

PREP DATE: 1/27/99
DUE DATE 2/01/99

INITIALS: AG DF

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
D9A080163 SOLID	CPTD8 TO DUE DATE:	01	x 1.01 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEF TO DUE DATE:	01	x 1.01 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEJ TO DUE DATE:	01	x 1.01 g 2/01/99	_____g	_____g	_____g
	CPTEJS		1.03 g	_____g	_____g	_____g
	CPTEJD		.97 g	_____g	_____g	_____g
D9A080163 SOLID	CPTEN TO DUE DATE:	01	x 1.01 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEP TO DUE DATE:	01	x 1.03 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTER TO DUE DATE:	01	x 1.02 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTET TO DUE DATE:	01	x 1.02 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEV TO DUE DATE:	01	x 1.01 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEW TO DUE DATE:	01	x 1.00 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTEX TO DUE DATE:	01	x 1.00 g 2/01/99	_____g	_____g	_____g
	CPTEXS		1.01 g	_____g	_____g	_____g
	CPTEXD		1.00 g	_____g	_____g	_____g
D9A080163 SOLID	CPTF1 TO DUE DATE:	01	x 1.00 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTF2 TO DUE DATE:	01	x .99 g 2/01/99	_____g	_____g	_____g
D9A080163 SOLID	CPTF3 TO DUE DATE:	01	x 1.00 g 2/01/99	_____g	_____g	_____g

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:15:04

BATCH NUMBER: 9011129 PREP DATE: 1/27/99
DUE DATE 2/01/99 INITIALS: AG/FF

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
D9A080163	CPTFE	01	x 1.01 g	_____g	_____g	_____g
SOLID	TO DUE DATE:		2/01/99			
D9A080163	CPTFG	01	x 1.00 g	_____g	_____g	_____g
SOLID	TO DUE DATE:		2/01/99			
D9A110000	CPTVEB	01	x 1.00 g	_____g	_____g	_____g
SOLID	DUE DATE:		0/00/00			
	CPTVEC		1.00 g	_____g	_____g	_____g
	CPTVEL		1.00 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: Final Vol. Brought to 100g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

	AG	AL	AS	BA	BE	CD	CO	CR	CU	FE	MN	NI	PB	SB	TL	ZN
MS/MSD 1:	ICP - 1						ICP - 2				GFAA		HG		ODD	
MS/MSD 2:	ICP - 1						ICP - 2				GFAA		HG		ODD	
MS/MSD 3:	ICP - 1						ICP - 2				GFAA		HG		ODD	
CHECK :	ICP - 1						ICP - 2				GFAA		HG		ODD	
CHECK DUP:	ICP - 1						ICP - 2				GFAA		HG		ODD	
STANDARD NUMBERS																

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:38:32

BATCH NUMBER: 9027146

PREP DATE: ~~1/28/99~~ 1-27-99
DUE DATE 12/15/98

INITIALS: MLC

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
D8K100192 SOLID	CNA66 DUE DATE:	01	x 50.00 g	_____g	_____g	_____g
	CNA66S		50.00 g	_____g	_____g	_____g
	CNA66D		50.01 g	_____g	_____g	_____g
D8K100192 SOLID	CNA68 DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D8K100192 SOLID	CNA69 DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D8K100192 SOLID	CNA6A DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D8K100192 SOLID	CNA6C DUE DATE:	01	x 50.00 g	_____g	_____g	_____g
D8K100192 SOLID	CNA6D DUE DATE:	01	x 50.00 g	_____g	_____g	_____g
D8K100192 SOLID	CNA6E DUE DATE:	01	x 49.98 g	_____g	_____g	_____g
D8K100192 SOLID	CNA6F DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D8K100200 SOLID	CNAAD DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D8K100200 SOLID	CNAAE DUE DATE:	01	x 49.99 g	_____g	_____g	_____g
D9A260000 SOLID	CQ7RTB DUE DATE:	01	x 50.02 g	_____g	_____g	_____g
D9A270000 SOLID	CQ8RKC DUE DATE:	01	x 50.01 g	_____g	_____g	_____g
	CQ8RKL		50.00 g	_____g	_____g	_____g

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:38:32

BATCH NUMBER: 9027146 PREP DATE: ~~1/28/99~~ 1-27-99
DUE DATE 12/15/98 INITIALS: AVG

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: brought to 509
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

CU FE MO

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	____	____

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:14:52

BATCH NUMBER: 9019172

PREP DATE: 1/27/99
DUE DATE 2/01/99

INITIALS: [illegible]

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190 SOLID	CPXA1 TO DUE DATE:	01	X .54 g 2/01/99	g	g	g
	CPXA1S		.54 g	g	g	g
	CPXA1X		.52 g	g	g	g
* D9A130190 SOLID	CPXA3 TO DUE DATE:	01	X .49 g 2/01/99	g	g	g
D9A130190 SOLID	CPXA5 TO DUE DATE:	01	X .97 g 2/01/99	g	g	g
D9A130190 SOLID	CPXA6 TO DUE DATE:	01	X .98 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXA7 TO DUE DATE:	01	X .49 g 2/01/99	g	g	g
D9A130190 SOLID	CPXA8 TO DUE DATE:	01	X .98 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXA9 TO DUE DATE:	01	X .53 g 2/01/99	g	g	g
D9A130190 SOLID	CPXAA TO DUE DATE:	01	X .99 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAC TO DUE DATE:	01	X .49 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAD TO DUE DATE:	01	X .53 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAE TO DUE DATE:	01	X .52 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAF TO DUE DATE:	01	X .48 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAG TO DUE DATE:	01	X .53 g 2/01/99	g	g	g
* D9A130190 SOLID	CPXAH TO DUE DATE:	01	X .49 g 2/01/99	g	g	g

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:14:52

BATCH NUMBER: 9019172 PREP DATE: 1/27/99
DUE DATE 2/01/99 INITIALS: AG/ff

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190 SOLID	CPXAJ TO DUE DATE: 2/01/99	01	X .48 g	____g	____g	____g
D9A190000 SOLID	CQ2GNB DUE DATE: 0/00/00	01	X 1.00 g	____g	____g	____g
	CQ2GNC		1.00 g	____g	____g	____g
	CQ2GNL		1.00 g	____g	____g	____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG ____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: * Limited Sample: final vol. brought 50g All others brought to 100g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY ____

ICP ELEMENTS WITHIN THE BATCH:

AL BE CA CD CU FE KX MG NA ZN

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	____	____	____	____	____

: Instrument Upload Run Log - Page 1 :
: Started Thu Jan 28 05:10:53 1999 by ANDERSOT :
: Data File: UPL$DEN_DATA_ROOT:<TJA>0127H.ASP;1 :

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	CAL	1	27-JAN-1999	21:48:00			002
2	CAL	1	27-JAN-1999	21:52:00			002
3	CAL	1	27-JAN-1999	21:55:00			002
4	ICV	1	27-JAN-1999	21:59:00			002
5	ICB	1	27-JAN-1999	22:02:00			002
6	CRI	1	27-JAN-1999	22:06:00			002
7	ICSA	1	27-JAN-1999	22:09:00			002
8	ICSAB	1	27-JAN-1999	22:13:00			002
9	CCV1	1	27-JAN-1999	22:16:00			002
10	CCB1	1	27-JAN-1999	22:20:00			002
11	CPTVEB	1	27-JAN-1999	22:53:00	9011129	D9A110000	002
12	CPTVEC	1	27-JAN-1999	22:56:00	9011129	D9A110000	002
13	CPTVEL	1	27-JAN-1999	23:00:00	9011129	D9A110000	002
14	CPTD8	1	27-JAN-1999	23:03:00	9011129	D9A080163	002
15	CPTEF	1	27-JAN-1999	23:07:00	9011129	D9A080163	002
16	CPTEJ	1	27-JAN-1999	23:10:00	9011129	D9A080163	002
17	CPTEJP	1	27-JAN-1999	23:14:00			002
18	CPTEJS	1	27-JAN-1999	23:17:00	9011129	D9A080163	002
19	CPTEJD	1	27-JAN-1999	23:21:00	9011129	D9A080163	002
20	CCV2	1	27-JAN-1999	23:24:00			002
21	CCB2	1	27-JAN-1999	23:28:00			002
22	CPTEN	1	27-JAN-1999	23:31:00	9011129	D9A080163	002
23	CPTEP	1	27-JAN-1999	23:35:00	9011129	D9A080163	002
24	CPTER	1	27-JAN-1999	23:39:00	9011129	D9A080163	002
25	CPTET	1	27-JAN-1999	23:42:00	9011129	D9A080163	002
26	CPTEV	1	27-JAN-1999	23:46:00	9011129	D9A080163	002
27	CPTEW	1	27-JAN-1999	23:49:00	9011129	D9A080163	002
28	CPTEX	1	27-JAN-1999	23:53:00	9011129	D9A080163	002
29	CPTEXS	1	28-JAN-1999	00:02:00	9011129	D9A080163	002
30	CPTEXD	1	28-JAN-1999	00:05:00	9011129	D9A080163	002
31	CPTF1	1	28-JAN-1999	00:09:00	9011129	D9A080163	002
32	CCV3	1	28-JAN-1999	00:12:00			002
33	CCB3	1	28-JAN-1999	00:16:00			002
34	CPTF2	1	28-JAN-1999	00:19:00	9011129	D9A080163	002
35	CPTF3	1	28-JAN-1999	00:23:00	9011129	D9A080163	002
36	CPTFE	1	28-JAN-1999	00:26:00	9011129	D9A080163	002
37	CPTFG	1	28-JAN-1999	00:30:00	9011129	D9A080163	002
38	CCV4	1	28-JAN-1999	00:33:00			002
39	CCB4	1	28-JAN-1999	00:37:00			002
40	CQ7RTBW	1	28-JAN-1999	00:40:00	9027146	D9A260000	002
41	CQ8RKCW	1	28-JAN-1999	00:44:00	9027146	D9A270000	002
42	CQ8RKLW	1	28-JAN-1999	00:48:00	9027146	D9A270000	002
43	CNA66W	1	28-JAN-1999	00:51:00	9027146	D8K100192	002
44	CNA66PW	1	28-JAN-1999	00:55:00			002

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CNA66SW	1	28-JAN-1999	00:58:00	9027146	D8K100192	002
46	CNA66DW	1	28-JAN-1999	01:02:00	9027146	D8K100192	002
47	CNA68W	1	28-JAN-1999	01:05:00	9027146	D8K100192	002
48	CNA69W	1	28-JAN-1999	01:09:00	9027146	D8K100192	002
49	CNA6AW	1	28-JAN-1999	01:12:00	9027146	D8K100192	002
50	CCV5	1	28-JAN-1999	01:15:00			002
51	CCB5	1	28-JAN-1999	01:19:00			002
52	CNA6CW	1	28-JAN-1999	01:22:00	9027146	D8K100192	002
53	CNA6DW	1	28-JAN-1999	01:26:00	9027146	D8K100192	002
54	CNA6EW	1	28-JAN-1999	01:30:00	9027146	D8K100192	002
55	CNA6FW	1	28-JAN-1999	01:33:00	9027146	D8K100192	002
56	CNAADW	1	28-JAN-1999	01:37:00	9027146	D8K100200	002
57	CNAAEW	1	28-JAN-1999	01:50:00	9027146	D8K100200	002
58	CCV6	1	28-JAN-1999	01:54:00			002
59	CCB6	1	28-JAN-1999	01:57:00			002
60	CPXA1	[illegible]	28-JAN-1999	02:01:00	9019172	D9A130190	002
61	CPXA1S	1	28-JAN-1999	02:04:00	9019172	D9A130190	002
62	CPXA1X	1	28-JAN-1999	02:08:00	9019172	D9A130190	002
63	CPXA1PDS	1	28-JAN-1999	02:11:00			002
64	CPXAG	5	28-JAN-1999	02:15:00	9019172	D9A130190	002
65	CPXAH	2 For Zn	28-JAN-1999	02:18:00	9019172	D9A130190	002
66	ICSA	1	28-JAN-1999	02:22:00			002
67	ICSAB	1	28-JAN-1999	02:25:00			002
68	CCV7	1	28-JAN-1999	02:29:00			002
69	CCB7	1	28-JAN-1999	02:32:00			002

End of Report

Standardization Rpt. Wed 01-27-99 09:51:52 PM page 1

Method: ICP3Y Standard: CAL BLK ✓

Elem	Ag	Al	As	B	Ba	Be	Ca
Avge	.00087	.02597	-.00047	.00000	-.00020	-.00174	.30598
SDev	.00105	.00023	.00269	.00000	.00034	.00049	.00156
%RSD	120.40	.90462	575.64	.00000	173.21	28.160	.50884
#1	.00000	.02585	.00264	.00000	-.00059	-.00118	.30433
#2	.00203	.02581	-.00203	.00000	.00000	-.00203	.30742
#3	.00058	.02624	-.00202	.00000	.00000	-.00202	.30619

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Avge	.00204	.00048	.00125	.00058	.00029	.01967	.00019
SDev	.00145	.00117	.00275	.00029	.00000	.00082	.00017
%RSD	71.251	245.05	219.23	49.276	.95708	4.1615	86.614
#1	.00206	-.00059	-.00088	.00029	.00029	.01939	.00029
#2	.00348	.00029	.00435	.00058	.00029	.02059	.00000
#3	.00058	.00173	.00029	.00086	.00029	.01903	.00029

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Avge	-.00199	.00116	.00400	.01774	-.00059	-.02752	.01318
SDev	.00079	.00001	.00572	.00163	.00378	.00249	.00455
%RSD	39.889	.95708	143.05	9.2140	643.16	9.0420	34.490
#1	-.00206	.00118	.00969	.01880	-.00294	-.02908	.01263
#2	-.00116	.00116	-.00174	.01856	.00377	-.02465	.01798
#3	-.00274	.00115	.00404	.01586	-.00259	-.02883	.00894

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Avge	.00456	-.00192	.01067	-.00059	.00068	.00029	.00020
SDev	.00221	.00296	.00186	.00117	.00017	.00029	.00067
%RSD	48.319	154.25	17.409	198.69	25.747	100.20	340.13
#1	.00588	.00059	.01263	-.00176	.00088	.00000	.00059
#2	.00580	-.00116	.01044	-.00058	.00058	.00058	.00058
#3	.00202	-.00519	.00894	.00058	.00058	.00029	-.00058

Elem	V	Zn
Avge	.00019	.00504
SDev	.00034	.00072
%RSD	173.21	14.295
#1	.00000	.00588
#2	.00058	.00464
#3	.00000	.00461

THA 1-27/28-99

TJA 54 0127H

upload file 0127H.ASP

ICP 002

SOP: CorpMT0001DEN

IntStd Mode	1 Counts	2 NOTUSED	3 NOTUSED	4 NOTUSED	5 NOTUSED	6 NOTUSED	7 NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3440	--	--	--	--	--	--
SDev	32.81950	--	--	--	--	--	--
%RSD	.9539851	--	--	--	--	--	--
#1	3404	--	--	--	--	--	--
#2	3448	--	--	--	--	--	--
#3	3468	--	--	--	--	--	--

Standardization Rpt. Wed 01-27-99 09:55:13 PM page 1

Method: ICP3Y Standard: CAL STD

Elem	Ag	Al	As	B	Ba	Be	Ca
Avge	.73167	1.2976	.32792	.24495	1.5116	1.5328	11.803
SDev	.00556	.0034	.01139	.00255	.0022	.0053	.098
%RSD	.76019	.26480	3.4722	1.0411	.14775	.34434	.82818
#1	.73534	1.2970	.32607	.24492	1.5108	1.5369	11.858
#2	.73440	1.3014	.34012	.24752	1.5099	1.5346	11.860
#3	.72527	1.2946	.31757	.24242	1.5141	1.5268	11.690

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Avge	.88259	.56944	.87705	.32426	.86893	4.6771	3.0890
SDev	.01023	.00554	.00615	.00041	.00355	.0030	.0151
%RSD	1.1595	.97268	.70109	.12539	.40903	.06456	.48841
#1	.88856	.57070	.88212	.32461	.87128	4.6781	3.0861
#2	.88844	.57424	.87883	.32381	.87068	4.6795	3.0756
#3	.87078	.56338	.87021	.32435	.86484	4.6737	3.1054

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Avge	6.8814	1.1725	1.2338	1.6475	1.4069	1.0088	.61116
SDev	.0269	.0061	.0182	.0069	.0132	.0124	.01861
%RSD	.39129	.52321	1.4754	.41681	.93616	1.2287	3.0442
#1	6.8996	1.1765	1.2155	1.6553	1.4089	1.0157	.61171
#2	6.8942	1.1756	1.2341	1.6453	1.3928	1.0163	.59229
#3	6.8505	1.1655	1.2519	1.6421	1.4189	.99453	.62949

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Avge	.73671	.83915	30.270	1.0159	1.6858	.54089	.27892
SDev	.02373	.00982	.213	.0123	.0014	.00087	.00106
%RSD	3.2205	1.1697	.70329	1.2116	.08246	.16084	.38153
#1	.75849	.83993	30.353	1.0260	1.6860	.54111	.27978
#2	.74022	.84854	30.430	1.0195	1.6843	.54162	.27926
#3	.71143	.82896	30.029	1.0022	1.6870	.53993	.27773

Elem	V	Zn
Avge	.55315	.44640
SDev	.00342	.00495
%RSD	.61887	1.1081
#1	.55634	.44999
#2	.55356	.44844
#3	.54953	.44076

IntStd Mode	1 Counts	2 NOTUSED	3 NOTUSED	4 NOTUSED	5 NOTUSED	6 NOTUSED	7 NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3462	--	--	--	--	--	--
SDev	67.55677	--	--	--	--	--	--
%RSD	1.951219	--	--	--	--	--	--
#1	3413	--	--	--	--	--	--
#2	3434	--	--	--	--	--	--
#3	3539	--	--	--	--	--	--

Standardization Report Wed 01-27-99 09:55:19 PM page 1

Method: ICP3Y Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag	328.068	CAL STD	CAL BLK	1.36197	-.001183	01/27/99 09:52:04
Al	308.215	CAL STD	CAL BLK	7.85359	-.203927	01/27/99 09:52:04
As	193.696	CAL STD	CAL BLK	6.16884	.002888	01/27/99 09:52:04
B	249.678	CAL STD	CAL BLK	4.06658	.000000	01/27/99 09:52:04
Ba	493.409	CAL STD	CAL BLK	.661467	.000130	01/27/99 09:52:04
Be	313.042	CAL STD	CAL BLK	.654591	.001140	01/27/99 09:52:04
Ca	317.933	CAL STD	CAL BLK	3.47935	-1.06460	01/27/99 09:52:04
Cd	228.802	CAL STD	CAL BLK	1.15555	-.002355	01/27/99 09:52:04
Co	228.616	CAL STD	CAL BLK	1.76529	-.000843	01/27/99 09:52:04
Cr	267.716	CAL STD	CAL BLK	1.14190	-.001430	01/27/99 09:52:04
Cu	324.754	CAL STD	CAL BLK	3.08447	-.001788	01/27/99 09:52:04
Fe	259.940	CAL STD	CAL BLK	11.5093	-.003346	01/27/99 09:52:04
K	766.491	CAL STD	CAL BLK	42.9421	-.844636	01/27/99 09:52:04
Li	670.784	CAL STD	CAL BLK	3.23747	-.000628	01/27/99 09:52:04
Mg	279.079	CAL STD	CAL BLK	5.80758	.011529	01/27/99 09:52:04
Mn	257.610	CAL STD	CAL BLK	.853161	-.000992	01/27/99 09:52:04
Mo	202.030	CAL STD	CAL BLK	.810008	-.003237	01/27/99 09:52:04
Na	330.223	CAL STD	CAL BLK	245.303	-4.35154	01/27/99 09:52:04
Ni	231.604	CAL STD	CAL BLK	.710089	.000417	01/27/99 09:52:04
P	214.914	CAL STD	CAL BLK	9.11685	.250908	01/27/99 09:52:04
Pb	220.353	CAL STD	CAL BLK	1.66075	-.021894	01/27/99 09:52:04
Sb	206.838	CAL STD	CAL BLK	1.29178	-.005896	01/27/99 09:52:04
Se	196.026	CAL STD	CAL BLK	11.8805	.022819	01/27/99 09:52:04
SiO2	251.611	CAL STD	CAL BLK	7.07239	-.075462	01/27/99 09:52:04
Sn	189.989	CAL STD	CAL BLK	9.84236	.005794	01/27/99 09:52:04
Sr	407.771	CAL STD	CAL BLK	.593439	-.000403	01/27/99 09:52:04
Ti	334.941	CAL STD	CAL BLK	1.84970	-.000535	01/27/99 09:52:04
Tl	190.864	CAL STD	CAL BLK	35.7497	-.007042	01/27/99 09:52:04
V	292.402	CAL STD	CAL BLK	1.76911	-.000342	01/27/99 09:52:04
Zn	213.856	CAL STD	CAL BLK	2.28777	-.011537	01/27/99 09:52:04

Analysis Report OC Standard Wed 01-27-99 09:58:57 PM page 1

Method: ICP3Y Sample Name: CAL STD Operator: THA
Run Time: 01/27/99 21:55:47
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99678	10.017	1.9847	.99298	1.0032	.99982	39.762
SDev	.00539	.052	.0564	.01015	.0011	.00299	.231
%RSD	.54036	.51762	2.8438	1.0226	.11068	.29877	.58036
#1	.99074	9.9577	2.0432	.98609	1.0019	.99641	39.496
#2	1.0011	10.042	1.9305	.98821	1.0037	1.0010	39.904
#3	.99851	10.052	1.9804	1.0046	1.0040	1.0020	39.886
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass
Value	1.0000	10.000	2.0000	1.0000	1.0000	1.0000	40.000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98763	.99826	.99770	1.0033	10.001	201.24	10.075
SDev	.01066	.00423	.00612	.0033	.060	.73	.003
%RSD	1.0798	.42391	.61371	.32699	.59850	.36085	.02910
#1	.97628	.99338	.99090	.99959	9.9330	200.43	10.077
#2	.99744	1.0009	1.0028	1.0059	10.025	201.83	10.076
#3	.98918	1.0005	.99945	1.0043	10.045	201.46	10.071
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass
Value	1.0000	1.0000	1.0000	1.0000	10.000	200.00	10.000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	39.947	.99810	1.0105	401.23	1.0010	10.017	.98971
SDev	.169	.00512	.0091	.93	.0139	.084	.01292
%RSD	.42375	.51292	.90053	.23098	1.3840	.83548	1.3057
#1	39.752	.99221	1.0006	400.16	.98594	10.102	.98045
#2	40.059	1.0016	1.0186	401.76	1.0037	10.012	1.0045
#3	40.029	1.0005	1.0123	401.77	1.0132	9.9351	.98420
Errors	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass	OC Pass
Value	40.000	1.0000	1.0000	400.00	1.0000	10.000	1.0000
Range	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0060	9.9594	212.76	9.8581	1.0034	1.0001	9.9681
SDev	.0059	.1403	1.22	.0796	.0025	.0046	.1039
%RSD	.58456	1.4086	.57236	.80776	.24797	.46413	1.0425
#1	.99959	10.042	211.36	9.7732	1.0006	.99491	9.9722
#2	1.0112	10.039	213.58	9.8699	1.0044	1.0017	9.8622
#3	1.0072	9.7975	213.33	9.9312	1.0053	1.0038	10.070
Errors	OC Pass	OC Pass	NOCHECK	OC Pass	OC Pass	OC Pass	OC Pass
Value	1.0000	10.000		10.000	1.0000	1.0000	10.000

Range	5.0000	5.0000		5.0000	5.0000	5.0000	5.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	1.0009	.99588					
SDev	.0044	.00750					
%RSD	.44107	.75339					
#1	.99603	.98722					
#2	1.0047	1.0001					
#3	1.0018	1.0003					
Errors	QC Pass	QC Pass					
Value	1.0000	1.0000					
Range	5.0000	5.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3504	--	--	--	--	--	--
SDev	20.36415	--	--	--	--	--	--
%RSD	.5811141	--	--	--	--	--	--
#1	3523	--	--	--	--	--	--
#2	3483	--	--	--	--	--	--
#3	3507	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICV Operator: THA
Run Time: 01/27/99 21:59:16
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51152	4.9919	.49583	.53208	.50822	.50679	19.843
SDev	.00096	.0103	.02024	.00350	.00068	.00034	.003
%RSD	.18695	.20643	4.0819	.65776	.13366	.06740	.01519
#1	.51061	4.9806	.50403	.53267	.50820	.50710	19.842
#2	.51142	4.9942	.47278	.52832	.50891	.50683	19.841
#3	.51252	5.0008	.51068	.53525	.50755	.50643	19.847
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	.55200	.55200	.55200	.55200	22.100
Low	.44800	4.4800	.44800	.44800	.44800	.44800	17.920

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50770	.50061	.51098	.51018	5.0841	49.431	4.9117
SDev	.00080	.00054	.00131	.00190	.0052	.106	.0102
%RSD	.15748	.10853	.25656	.37269	.10236	.21480	.20760
#1	.50727	.50059	.51159	.51188	5.0900	49.319	4.9181
#2	.50862	.50007	.50948	.51054	5.0823	49.531	4.9171
#3	.50721	.50116	.51188	.50813	5.0801	49.443	4.8999
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	55.200	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	44.800	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.262	.50672	.52323	202.14	.51489	2.0130	.52546
SDev	.011	.00078	.00229	.32	.00441	.0231	.01619
%RSD	.05472	.15455	.43721	.15864	.85700	1.1466	3.0817
#1	20.251	.50596	.52165	201.94	.51705	2.0024	.51667
#2	20.273	.50752	.52219	202.51	.51780	2.0395	.54415
#3	20.260	.50667	.52586	201.97	.50981	1.9971	.51557
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.100	.55200	.55200	221.00	.55200	2.2100	.55200
Low	17.920	.44800	.44800	179.20	.44800	1.7920	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49072	4.9956	110.36	5.0744	.50384	.50862	5.0757
SDev	.01337	.0573	.06	.1131	.00064	.00037	.1203
%RSD	2.7257	1.1466	.05808	2.2288	.12745	.07324	2.3699
#1	.47631	4.9974	110.29	4.9552	.50382	.50819	5.1059
#2	.49312	5.0520	110.39	5.0878	.50450	.50881	4.9432
#3	.50273	4.9375	110.41	5.1802	.50321	.50885	5.1780
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5190	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4810	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50620	.50204
SDev	.00182	.00457
%RSD	.35902	.91021
#1	.50411	.49742
#2	.50718	.50214
#3	.50732	.50656

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3506	--	--	--	--	--	--
SDev	10.71611	--	--	--	--	--	--
%RSD	.3056568	--	--	--	--	--	--
#1	3494	--	--	--	--	--	--
#2	3515	--	--	--	--	--	--
#3	3508	--	--	--	--	--	--

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Method: ICP3Y Sample Name: ICB Operator: THA
Run Time: 01/27/99 22:02:48
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00011	.00059	-.00123	-.00154	.00019	-.00036	.02872
SDev	.00059	.01006	.01232	.00067	.00011	.00001	.00175
%RSD	524.68	1693.7	998.25	43.308	56.458	1.4032	6.0903
#1	-.00002	-.00248	.01167	-.00231	.00013	-.00036	.02670
#2	.00075	-.00757	-.01287	-.00115	.00032	-.00036	.02969
#3	-.00040	.01183	-.00251	-.00116	.00013	-.00037	.02976
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00070	-.00017	.00280	.00349	.00322	-.15156	.00122
SDev	.00150	.00127	.00086	.00087	.00002	.34034	.00093
%RSD	215.67	734.42	30.699	24.976	.71668	224.55	75.847
#1	-.00110	-.00034	.00378	.00260	.00322	-.25691	.00214
#2	-.00195	-.00135	.00246	.00434	.00320	.22899	.00029
#3	.00097	.00117	.00217	.00351	.00324	-.42678	.00122
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00553	.00006	.00639	.14657	.00512	.00939	-.02775
SDev	.00737	.00028	.00511	.02749	.00184	.02369	.00801
%RSD	133.21	438.04	80.014	18.754	35.918	252.30	28.861
#1	.00176	.00023	.01178	.12266	.00324	.03402	-.03139
#2	.01402	-.00026	.00160	.17660	.00521	.00737	-.03329
#3	.00081	.00023	.00580	.14045	.00692	-.01322	-.01857
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.02039	-.01783	.12207	-.00920	.00016	.00017	-.00364
SDev	.02443	.01174	.03741	.02592	.00010	.00081	.02560
%RSD	119.80	65.824	30.649	281.80	61.859	478.71	704.26
#1	-.01179	-.00428	.16237	.00575	.00010	-.00001	-.02741
#2	-.04796	-.02443	.11542	-.03913	.00010	-.00054	.02347
#3	-.00143	-.02479	.08843	.00579	.00028	.00105	-.00696
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00181	.00343
SDev	.00090	.00069
%RSD	49.944	20.014
#1	.00091	.00410
#2	.00271	.00272
#3	.00180	.00348

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3507	--	--	--	--	--	--
SDev	12.84008	--	--	--	--	--	--
%RSD	.3661299	--	--	--	--	--	--
#1	3507	--	--	--	--	--	--
#2	3520	--	--	--	--	--	--
#3	3494	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CRI Operator: THA
Run Time: 01/27/99 22:06:18
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02070	-.01186	.00649	-.00136	.00013	.00960	.00287
SDev	.00193	.01885	.03778	.00201	.00019	.00015	.00751
%RSD	9.3075	158.90	582.17	147.99	145.32	1.5424	261.56
#1	.02027	-.03091	.02466	-.00368	.00013	.00965	.00938
#2	.02280	.00679	.03176	-.00020	.00032	.00972	.00457
#3	.01903	-.01148	-.03695	-.00019	-.00006	.00944	-.00534
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	.03000					.01500	
Low	.01000					.00500	

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00937	.09892	.02213	.05215	-.00228	-.18614	-.00001
SDev	.00119	.00237	.00097	.00070	.00192	.18427	.00053
%RSD	12.747	3.9106	4.3787	1.3349	84.088	98.992	4116.3
#1	.00825	.09740	.02198	.05294	-.00339	-.25607	.00030
#2	.01062	.10332	.02317	.05164	-.00007	-.32521	-.00063
#3	.00923	.09604	.02125	.05186	-.00338	.02285	.00029
Errors	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK
High	.01500	.15000	.03000	.07500			
Low	.00500	.05000	.01000	.02500			

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00077	.03091	.00341	.30394	.08586	.03457	.00651
SDev	.01415	.00048	.00255	.29521	.00521	.03359	.01515
%RSD	1849.1	1.5431	74.760	97.127	6.0717	97.182	232.82
#1	-.00982	.03069	.00047	.17866	.08259	.05271	.02309
#2	.01683	.03146	.00493	.64113	.09187	.05518	-.00661
#3	-.00472	.03058	.00483	.09203	.08311	-.00420	.00305
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		.04500			.12000		
Low		.01500			.04000		

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.10825	.01126	.03681	.03443	-.00001	-.00036	.03624
SDev	.00915	.01406	.00846	.03147	.00010	.00081	.04666
%RSD	8.4529	124.86	22.997	91.408	1506.7	223.92	128.73
#1	.11418	.02255	.04608	.00061	-.00006	-.00107	.04656
#2	.09772	.01570	.03485	.06285	.00011	.00052	-.01471
#3	.11287	-.00448	.02949	.03983	-.00007	-.00054	.07688
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	.18000						

Low	.06000	
Elem	V	Zn
Units	ppm	ppm
Avge	.10268	.04115
SDev	.00114	.00153
%RSD	1.1071	3.7212
#1	.10278	.03954
#2	.10376	.04259
#3	.10149	.04131
Errors	LC Pass	LC Pass
High	.15000	.06000
Low	.05000	.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3496	--	--	--	--	--	--
SDev	21.75651	--	--	--	--	--	--
%RSD	.6222680	--	--	--	--	--	--
#1	3502	--	--	--	--	--	--
#2	3472	--	--	--	--	--	--
#3	3515	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSA Operator: THA
Run Time: 01/27/99 22:09:49
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00066	481.47	-.07469	.02016	.00256	-.00023	465.00
SDev	.00157	.18	.08309	.00561	.00034	.00011	1.03
%RSD	239.69	.03668	111.25	27.846	13.213	46.339	.22210
#1	.00204	481.46	L-.10365	.01395	.00295	-.00018	465.57
#2	-.00105	481.65	.01900	.02167	.00236	-.00016	463.80
#3	.00098	481.30	L-.13942	.02487	.00237	-.00036	465.61
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00496	.00271	.00591	.00110	178.18	-.29044	-.00002
SDev	.00137	.00103	.00277	.00268	.17	.09123	.00053
%RSD	27.690	37.846	46.863	243.87	.09321	31.410	3254.3
#1	-.00412	.00279	.00907	.00417	178.10	-.23397	.00029
#2	-.00421	.00165	.00480	-.00082	178.06	-.24166	-.00063
#3	-.00654	.00370	.00387	-.00005	178.37	-.39568	.00029
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	515.08	.00117	-.01035	-.98635	.01347	.03563	.02543
SDev	.42	.00026	.01034	.75060	.00636	.08367	.01036
%RSD	.08180	22.403	99.857	76.099	47.206	234.82	40.754
#1	514.75	.00087	-.00734	-.41021	.02076	-.01990	.03603
#2	514.94	.00130	L-.02186	-1.8352	.00904	-.00507	.02493
#3	515.56	.00134	-.00186	-.71367	.01062	.13186	.01532
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	Si02	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.05341	.00512	.01931	-.00094	.01899	.00316	.13677
SDev	.04230	.06490	.01355	.04488	.00011	.00054	.17958
%RSD	79.193	1266.5	70.148	4758.9	.56930	17.063	131.30
#1	L-.07609	-.01179	.02320	.04218	.01901	.00378	-.04401
#2	-.00461	-.04964	.00425	-.04739	.01910	.00289	.13920
#3	L-.07953	.07680	.03049	.00238	.01888	.00280	.31511
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00376	.00378
SDev	.00082	.00216
%RSD	21.731	57.257
#1	.00422	.00188
#2	.00282	.00332
#3	.00425	.00613

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3539	--	--	--	--	--	--
SDev	22.41381	--	--	--	--	--	--
%RSD	.6334028	--	--	--	--	--	--
#1	3516	--	--	--	--	--	--
#2	3561	--	--	--	--	--	--
#3	3539	--	--	--	--	--	--

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Method: ICP3Y Sample Name: ICSAB Operator: THA
Run Time: 01/27/99 22:13:23
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.95625	466.55	1.7238	2.0079	.48064	.48566	449.07
SDev	.00452	9.61	.0992	.0111	.00160	.00192	8.39
%RSD	.47236	2.0603	5.7561	.55081	.33354	.39498	1.8692
#1	.95109	477.22	1.8044	2.0034	.47949	.48357	458.22
#2	.95814	463.86	1.6130	1.9998	.47996	.48606	447.28
#3	.95951	458.56	1.7541	2.0205	.48247	.48734	441.72
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94162	.45042	.46526	.48534	172.29	48.868	.98440
SDev	.00855	.00378	.00284	.00141	3.23	.195	.00605
%RSD	.90806	.83874	.61119	.28974	1.8733	.39907	.61483
#1	.93314	.44908	.46751	.48504	175.81	49.046	.98589
#2	.95024	.45469	.46207	.48410	171.60	48.660	.97774
#3	.94150	.44750	.46621	.48687	169.46	48.900	.98957
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	498.13	.46061	.91560	48.840	.90374	1.8012	.96582
SDev	9.90	.00321	.02161	.117	.00687	.0546	.03136
%RSD	1.9867	.69699	2.3600	.23854	.76027	3.0330	3.2469
#1	509.07	.45707	.91881	48.752	.91097	1.8099	.95974
#2	495.53	.46141	.89257	48.796	.90295	1.7428	.93795
#3	489.80	.46334	.93543	48.972	.89730	1.8510	.99978
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.95643	4.6959	20.594	9.0433	.95190	.93433	9.2823
SDev	.02963	.1408	.060	.0782	.00168	.00458	.2905
%RSD	3.0984	2.9981	.29345	.86493	.17601	.48980	3.1298
#1	.99032	4.7332	20.524	9.0830	.95097	.92918	9.4645
#2	.94353	4.5402	20.624	9.0936	.95089	.93588	8.9472
#3	.93543	4.8143	20.633	8.9532	.95383	.93793	9.4351
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.46557	.92564
SDev	.00215	.00858
%RSD	.46180	.92662
#1	.46385	.91679
#2	.46487	.92622
#3	.46798	.93391

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3565	--	--	--	--	--	--
SDev	16.11345	--	--	--	--	--	--
%RSD	.4520037	--	--	--	--	--	--
#1	3557	--	--	--	--	--	--
#2	3554	--	--	--	--	--	--
#3	3583	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CCV1 Operator: THA
Run Time: 01/27/99 22:16:50
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50465	5.0013	.97654	.50060	.50061	.50493	20.035
SDev	.00334	.0182	.01323	.00233	.00239	.00165	.093
%RSD	.66205	.36423	1.3551	.46475	.47729	.32657	.46311
#1	.50789	5.0158	.98931	.50275	.50150	.50661	20.123
#2	.50485	4.9809	.96289	.50094	.49791	.50332	20.044
#3	.50122	5.0071	.97741	.49813	.50243	.50485	19.938
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50243	.50040	.50341	.50426	5.0755	99.477	4.9540
SDev	.00387	.00427	.00347	.00135	.0300	.575	.0334
%RSD	.77064	.85340	.68988	.26792	.59122	.57828	.67441
#1	.50586	.50433	.50707	.50399	5.1101	99.975	4.9588
#2	.50321	.50101	.50300	.50306	5.0593	98.847	4.9184
#3	.49823	.49586	.50016	.50572	5.0570	99.608	4.9847
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.170	.50285	.50474	201.10	.51237	5.0386	.50506
SDev	.089	.00109	.00407	.88	.00571	.0394	.04101
%RSD	.44001	.21720	.80603	.43617	1.1148	.78260	8.1194
#1	20.272	.50411	.50024	202.08	.51877	5.0037	.55037
#2	20.130	.50220	.50816	200.39	.50779	5.0814	.49433
#3	20.108	.50224	.50583	200.83	.51054	5.0307	.47048
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

NR 2.8.99

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49826	5.0421	106.96	5.0328	.50100	.49964	4.9133
SDev	.01715	.0392	.42	.0740	.00238	.00196	.1545
%RSD	3.4418	.77832	.39317	1.4705	.47420	.39225	3.1442
#1	.49120	4.9974	107.36	5.1111	.50151	.50113	5.0033
#2	.48576	5.0708	107.00	4.9640	.49841	.49742	5.0017
#3	.51781	5.0581	106.52	5.0234	.50308	.50036	4.7349
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50083	.49965
SDev	.00332	.00440
%RSD	.66384	.88015
#1	.50367	.50319
#2	.50165	.50103
#3	.49718	.49472
Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3496	--	--	--	--	--	--
SDev	49.30854	--	--	--	--	--	--
%RSD	1.410359	--	--	--	--	--	--
#1	3451	--	--	--	--	--	--
#2	3488	--	--	--	--	--	--
#3	3549	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCB1 Operator: THA
Run Time: 01/27/99 22:20:19
Comment: CALIBRATION
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00077	.00275	-.00760	-.00115	.00044	-.00036	.01938
SDev	.00179	.00160	.03113	.00001	.00029	.00002	.00516
%RSD	232.85	58.173	409.40	.63512	65.087	4.9032	26.611
#1	.00234	.00330	.01697	-.00116	.00070	-.00038	.02441
#2	-.00118	.00095	-.04261	-.00114	.00013	-.00034	.01411
#3	.00115	.00401	.00283	-.00114	.00051	-.00036	.01961
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00021	-.00302	.00226	.00261	.00760	.28291	.00183
SDev	.00185	.00104	.00075	.00090	.00195	.34606	.00106
%RSD	863.39	34.414	33.128	34.696	25.707	122.32	58.012
#1	.00186	-.00186	.00185	.00352	.00986	.52284	.00123
#2	-.00079	-.00335	.00181	.00171	.00645	-.11380	.00121
#3	-.00171	-.00386	.00312	.00260	.00649	.43968	.00306
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00692	-.00026	.00717	-.03629	.00330	.01423	.00054
SDev	.00791	.00024	.00424	.77015	.00243	.02954	.02978
%RSD	114.28	92.229	59.092	2122.1	73.631	207.64	5497.7
#1	-.00083	-.00025	.00954	.64383	.00145	.04629	.02667
#2	.00662	-.00002	.00228	-.87254	.00240	-.01188	-.03189
#3	.01497	-.00050	.00969	.11984	.00605	.00827	.00684
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01899	-.00639	.05994	-.00540	.00016	.00034	.00987
SDev	.02470	.05438	.02077	.03696	.00010	.00030	.04248
%RSD	130.11	851.32	35.238	683.96	59.110	87.903	430.58
#1	.00950	.05009	.07865	.03407	.00011	-.00001	-.03773
#2	-.03200	-.01087	.06093	-.01108	.00027	.00051	.02338
#3	-.03447	-.05838	.03725	-.03920	.00010	.00052	.04395
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00216	.00149
SDev	.00219	.00072
%RSD	101.16	48.727
#1	.00391	.00223
#2	-.00029	.00078
#3	.00288	.00146

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3507	--	--	--	--	--	--
SDev	20.10228	--	--	--	--	--	--
%RSD	.5731577	--	--	--	--	--	--
#1	3486	--	--	--	--	--	--
#2	3525	--	--	--	--	--	--
#3	3511	--	--	--	--	--	--

Analysis Report Thu 01-28-99 01:57:30 AM page 1

Method: ICP3Y - Sample Name: CCV6 Operator: THA
Run Time: 01/28/99 01:54:19
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51334	5.1406	1.0429	.50891	.50615	.50727	20.417
SDev	.00119	.0153	.0271	.00206	.00067	.00058	.031
%RSD	.23188	.29688	2.5974	.40438	.13218	.11520	.14954
#1	.51452	5.1362	1.0192	.51008	.50680	.50748	20.407
#2	.51335	5.1576	1.0724	.51012	.50547	.50771	20.451
#3	.51214	5.1281	1.0370	.50654	.50618	.50660	20.392
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51015	.50821	.50727	.50975	5.1289	102.02	5.1089
SDev	.00241	.00167	.00139	.00066	.0113	.15	.0139
%RSD	.47321	.32839	.27328	.13024	.21975	.14478	.27164
#1	.51293	.50630	.50840	.51012	5.1334	102.19	5.1247
#2	.50888	.50897	.50572	.51016	5.1373	101.93	5.1030
#3	.50863	.50936	.50769	.50899	5.1161	101.94	5.0989
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.580	.51015	.51164	206.61	.51117	5.0393	.49511
SDev	.018	.00125	.00385	.95	.00643	.1199	.01642
%RSD	.08748	.24449	.75187	.45997	1.2582	2.3792	3.3169
#1	20.582	.51072	.50762	207.58	.51844	5.0586	.49579
#2	20.597	.51102	.51200	206.58	.50623	5.1484	.51119
#3	20.561	.50872	.51529	205.68	.50883	4.9109	.47837
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51258	5.0402	110.22	5.1483	.50655	.50359	5.0467
SDev	.01334	.0543	.16	.0168	.00008	.00064	.1703
%RSD	2.6032	1.0770	.14328	.32678	.01543	.12628	3.3747
#1	.50236	5.0806	110.08	5.1448	.50659	.50351	4.9557
#2	.50771	4.9785	110.39	5.1335	.50646	.50300	5.2432
#3	.52768	5.0615	110.19	5.1666	.50659	.50426	4.9412
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50708	.51064
SDev	.00082	.00113
%RSD	.16118	.22068
#1	.50750	.51157
#2	.50761	.51098
#3	.50614	.50939
Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	/
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3372	--	--	--	--	--	--
SDev	18.33086	--	--	--	--	--	--
%RSD	.5435990	--	--	--	--	--	--
#1	3362	--	--	--	--	--	--
#2	3361	--	--	--	--	--	--
#3	3393	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCB6 Operator: THA
Run Time: 01/28/99 01:57:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00002	.00553	-.02549	-.00118	.00039	-.00046	.01693
SDev	.00138	.00695	.02464	.00206	.00022	.00022	.00412
%RSD	7460.1	125.65	96.657	174.15	57.709	47.285	24.315
#1	.00081	-.00170	-.04224	-.00355	.00052	-.00059	.01504
#2	.00082	.00613	-.03705	.00001	.00052	-.00021	.02166
#3	-.00158	.01216	.00280	.00001	.00013	-.00059	.01411
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00040	-.00239	.00114	.00032	.00677	-.18609	.00095
SDev	.00095	.00225	.00108	.00139	.00336	.17731	.00145
%RSD	238.64	94.136	94.922	433.38	49.603	95.280	152.16
#1	-.00075	-.00498	.00158	.00001	.01013	-.02754	.00222
#2	-.00112	-.00084	.00193	.00184	.00342	-.37755	-.00063
#3	.00068	-.00136	-.00009	-.00089	.00676	-.15319	.00127
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01499	.00018	.00397	.49104	.00112	.03285	.00193
SDev	.00836	.00015	.00050	.60661	.00359	.04188	.01140
%RSD	55.802	82.465	12.554	123.54	320.77	127.51	590.92
#1	.02433	.00001	.00340	1.1782	.00499	.04539	.00523
#2	.01244	.00026	.00415	.26489	.00046	.06702	.01132
#3	.00819	.00026	.00435	.02999	-.00209	-.01388	-.01076
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00717	-.02129	.14909	.02507	.00041	.00001	-.01405
SDev	.03093	.01452	.03088	.02727	.00010	.00000	.03368
%RSD	431.58	68.202	20.711	108.78	24.137	18.402	239.65
#1	-.00405	-.00498	.18330	-.00575	.00047	.00001	.02435
#2	.04214	-.02607	.14072	.03489	.00029	.00001	-.03856
#3	-.01659	-.03282	.12326	.04607	.00047	.00001	-.02795
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00112	-.00148
SDev	.00060	.00064
%RSD	53.576	43.455
#1	.00076	-.00084
#2	.00078	-.00213
#3	.00181	-.00148

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3411	--	--	--	--	--	--
SDev	8.242064	--	--	--	--	--	--
%RSD	.2416214	--	--	--	--	--	--
#1	3416	--	--	--	--	--	--
#2	3402	--	--	--	--	--	--
#3	3416	--	--	--	--	--	--

Analysis Report / Thu 01-28-99 02:04:30 AM page 1

Method: ICP3Y Sample Name: CPXA1 NR Operator: THA
Run Time: 01/28/99 02:01:19
Comment: 9019172
Mode: CONC Corr. Factor: 100 ran for Comparison purposes only THA 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.64631	8591.5	9.2345	6.5988	163.69	.52144	4692.3
SDev	.15680	10.2	10.069	.2730	.31	.02322	7.9
%RSD	24.262	.11919	109.04	4.1369	.18910	4.4533	.16827
#1	.80604	8580.7	13.340	6.2837	163.92	.53592	4683.2
#2	.64028	8601.1	-2.2386	6.7648	163.81	.53375	4696.2
#3	.49261	8592.5	16.602	6.7479	163.34	.49466	4697.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.1136	10.000	17.859	27.539	15021.	2826.2	7.0750
SDev	.1256	.167	.035	.116	23.	14.8	.0668
%RSD	4.0330	1.6688	.19855	.42049	.15438	.52309	.94365
#1	2.9688	9.8745	17.819	27.608	14997.	2816.6	7.0079
#2	3.1801	10.189	17.883	27.604	15044.	2843.2	7.0757
#3	3.1920	9.9364	17.877	27.405	15022.	2818.7	7.1415
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2259.4	291.39	1.2617	235.66	10.102	1193.6	170.36
SDev	2.1	.69	.8743	64.48	.460	5.1	1.34
%RSD	.09092	.23686	69.292	27.362	4.5505	.42898	.78673
#1	2257.0	290.64	1.5218	310.11	10.378	1196.8	171.71
#2	2260.9	291.99	1.9764	199.36	10.356	1196.3	170.33
#3	2260.2	291.53	.28691	197.51	9.5709	1187.7	169.03
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-1.4380	4.9390	1834.6	4.9686	52.814	423.78	1.8677
SDev	2.7391	7.8702	21.4	6.2150	.035	.31	5.5847
%RSD	190.48	159.35	1.1662	125.09	.06542	.07337	299.01
#1	-.08841	9.1559	1844.2	2.3022	52.784	423.42	4.0545
#2	-4.5900	-4.1411	1849.5	.53171	52.806	423.95	6.0282
#3	.36446	9.8022	1810.1	12.072	52.852	423.97	-4.4795
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	28.130	303.37					
SDev	.205	.84					
%RSD	.72829	.27609					
#1	28.248	302.40					
#2	28.250	303.90					
#3	27.894	303.80					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3402	--	--	--	--	--	--
SDev	13.54153	--	--	--	--	--	--
%RSD	.3980865	--	--	--	--	--	--
#1	3388	--	--	--	--	--	--
#2	3401	--	--	--	--	--	--
#3	3415	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:08:01 AM page 1

Method: ICP3Y Sample Name: CPXA1S MS Operator: THA
Run Time: 01/28/99 02:04:50
Comment: 9019172 used this one
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.0637	12613.	187.98	111.58	369.48	5.8135	9527.8
SDev	.1539	22.	6.41	.65	.10	.0193	25.0
%RSD	3.0384	.17104	3.4072	.58340	.02828	.33246	.26263
#1	5.1386	12590.	181.40	111.68	369.61	5.8246	9499.8
#2	5.1657	12632.	194.20	110.88	369.41	5.8246	9547.8
#3	4.8867	12618.	188.35	112.17	369.45	5.7911	9536.0
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.0283	56.970	38.485	52.570	15368.	8172.2	108.48
SDev	.0549	.115	.101	.089	34.	12.4	.03
%RSD	.68443	.20102	.26309	.17001	.22339	.15138	.02552
#1	8.0713	56.962	38.535	52.612	15329.	8158.1	108.46
#2	7.9664	57.089	38.552	52.467	15395.	8177.4	108.51
#3	8.0473	56.860	38.369	52.630	15379.	8181.2	108.47
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7613.2	341.02	97.838	5245.8	57.378	2106.1	212.38
SDev	13.2	.76	2.084	58.3	.496	6.1	1.27
%RSD	.17320	.22263	2.1305	1.1105	.86499	.29197	.59806
#1	7599.2	340.15	96.736	5245.9	57.748	2100.4	213.84
#2	7625.4	341.57	100.24	5304.0	56.814	2105.2	211.79
#3	7614.8	341.35	96.536	5187.5	57.571	2112.6	211.52
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	31.639	183.49	2503.8	186.05	154.52	617.78	182.82
SDev	1.630	1.72	21.5	10.81	.15	.73	14.41
%RSD	5.1527	.93571	.86026	5.8101	.09668	.11852	7.8826
#1	33.520	184.36	2490.8	186.58	154.35	617.00	198.35
#2	30.760	184.59	2528.7	174.98	154.63	617.91	180.21
#3	30.636	181.51	2492.0	196.58	154.58	618.44	169.88
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	79.805	335.43					
SDev	.194	1.72					
%RSD	.24255	.51411					
#1	80.011	333.74					
#2	79.776	335.36					
#3	79.627	337.19					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3422	--	--	--	--	--	--
SDev	20.72845	--	--	--	--	--	--
%RSD	.6057094	--	--	--	--	--	--
#1	3401	--	--	--	--	--	--
#2	3423	--	--	--	--	--	--
#3	3442	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:11:32 AM page 1

Method: ICP3Y Sample Name: CPXA1X DUP Operator: THA
Run Time: 01/28/99 02:08:21
Comment: 9019172
Mode: CONC Corr. Factor: 100

used this one

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43640	9010.2	12.999	7.1213	172.63	.56339	4942.7
SDev	.20595	4.9	5.853	.4086	.29	.01420	4.9
%RSD	47.193	.05422	45.028	5.7380	.16677	2.5204	.09860
#1	.67417	9004.6	17.866	7.5880	172.83	.57978	4938.8
#2	.31371	9013.4	14.626	6.8274	172.76	.55546	4941.0
#3	.32132	9012.7	6.5041	6.9486	172.30	.55492	4948.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.5029	10.623	18.679	29.311	15639.	2978.2	7.5473
SDev	.1659	.593	.291	.092	4.	26.3	.1354
%RSD	4.7372	5.5830	1.5563	.31547	.02289	.88401	1.7936
#1	3.6405	10.493	19.010	29.375	15642.	3006.5	7.6953
#2	3.5497	11.271	18.558	29.205	15635.	2973.5	7.4298
#3	3.3186	10.106	18.468	29.354	15640.	2954.5	7.5167
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2380.2	306.38	1.2587	185.49	10.608	1261.1	179.98
SDev	3.6	.29	.6836	88.16	.202	9.2	3.76
%RSD	.14974	.09420	54.310	47.529	1.9079	.73053	2.0907
#1	2383.6	306.08	1.8810	279.64	10.515	1253.2	182.81
#2	2380.4	306.65	.52704	171.93	10.841	1258.8	181.42
#3	2376.5	306.41	1.3680	104.89	10.470	1271.2	175.71
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-1.9206	-3.9325	1459.3	3.8576	55.719	417.75	9.7331
SDev	1.0640	7.3451	2.3	3.8994	.095	1.05	3.4436
%RSD	55.403	186.78	.15731	101.08	.17117	.25208	35.380
#1	-3.0069	4.2992	1456.6	5.8452	55.812	418.84	11.359
#2	-.88028	-9.8174	1460.9	-.63512	55.724	417.68	5.7776
#3	-1.8745	-6.2792	1460.3	6.3628	55.622	416.73	12.063
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00

Elem	V	Zn
Units	ppm	ppm
Avge	28.963	315.55
SDev	.121	.36
%RSD	.41829	.11462
#1	29.102	315.65
#2	28.903	315.15
#3	28.884	315.85

Errors	LC Pass	LC Pass
High	10000.	10000.
Low	-1.0000	-2.0000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3361	--	--	--	--	--	--
SDev	19.68730	--	--	--	--	--	--
%RSD	.5857549	--	--	--	--	--	--
#1	3338	--	--	--	--	--	--
#2	3370	--	--	--	--	--	--
#3	3374	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:15:05 AM page 1

Method: ICP3Y Sample Name: CPXA1PDS Operator: THA
Run Time: 01/28/99 02:11:53
Comment: 9019172 For Zn
Mode: CONC Corr. Factor: 100

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.9028	8567.5	177.54	109.07	343.92	5.3542	9045.5
SDev	.3141	21.7	4.16	.71	.41	.0043	30.7
%RSD	6.4075	.25347	2.3410	.65246	.11950	.08007	.33940
#1	5.2623	8542.4	181.15	108.30	344.24	5.3580	9012.3
#2	4.6809	8580.6	173.00	109.23	344.07	5.3496	9051.4
#3	4.7653	8579.5	178.48	109.69	343.45	5.3549	9072.8
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	100000.	10000.	10000.	10000.	5000.0	100000.
Low	-1.0000	-10.000	-10.000	-10.000	-1.0000	-.20000	-20.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.0063	54.374	35.049	50.019	14474.	7386.3	101.37
SDev	.4810	.554	.114	.037	36.	44.5	.29
%RSD	6.0076	1.0195	.32416	.07298	.24858	.60226	.28286
#1	7.5275	53.794	34.961	49.987	14434.	7357.7	101.19
#2	8.0018	54.430	35.009	50.011	14488.	7437.5	101.70
#3	8.4895	54.898	35.178	50.059	14501.	7363.6	101.22
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	10000.	10000.	50000.	50000.	5000.0
Low	-.50000	-1.0000	-1.0000	-2.0000	-10.000	-500.00	-5.0000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6992.6	325.27	93.531	4969.7	54.619	2062.1	208.01
SDev	15.2	1.20	.746	63.7	1.065	9.4	1.49
%RSD	.21749	.36975	.79759	1.2827	1.9498	.45715	.71614
#1	6975.3	323.88	93.168	5043.3	53.581	2051.3	209.58
#2	7003.7	325.88	93.036	4934.6	54.569	2068.3	207.83
#3	6998.9	326.04	94.389	4931.1	55.709	2066.8	206.62
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.	10000.	10000.	200000.	10000.	20000.	10000.
Low	-20.000	-1.0000	-2.0000	-500.00	-4.0000	-30.000	-5.0000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	40.815	180.50	3876.0	184.46	143.97	499.37	188.57
SDev	1.012	8.84	38.1	10.06	.13	1.25	11.53
%RSD	2.4791	4.8948	.98256	5.4547	.09046	.24945	6.1147
#1	39.679	190.44	3833.4	190.98	143.90	497.93	176.78
#2	41.621	177.56	3888.0	189.52	144.12	500.01	189.11
#3	41.145	173.52	3906.7	172.87	143.89	500.16	199.83
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	21400.	10000.	5000.0	10000.	10000.

Low	-6.0000	-20.000	-50.000	-10.000	-5.0000	-1.5000	-200.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	73.094	337.22					
SDev	.009	2.16					
%RSD	.01223	.63943					
#1	73.102	335.11					
#2	73.094	337.15					
#3	73.084	339.42					
Errors	LC Pass	LC Pass					
High	10000.	10000.					
Low	-1.0000	-2.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3392	--	--	--	--	--	--
SDev	2.593922	--	--	--	--	--	--
%RSD	.0764781	--	--	--	--	--	--
#1	3389	--	--	--	--	--	--
#2	3394	--	--	--	--	--	--
#3	3391	--	--	--	--	--	--

still 67% rec.

Analysis Report Thu 01-28-99 02:18:35 AM page 1

Method: ICP3Y Sample Name: CPXAG 5X Fe HIGH Operator: THA
Run Time: 01/28/99 02:15:25
Comment: 9019172
Mode: CONC Corr. Factor: 500

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	42.263	2127.4	497.58	6.8312	44.143	.04144	33284.
SDev	2.837	158.1	71.18	4.9245	3.251	.00595	2387.
%RSD	6.7126	7.4317	14.306	72.086	7.3645	14.367	7.1693
#1	45.538	2305.2	579.77	12.283	47.828	.03529	35975.
#2	40.541	2074.3	457.79	5.5040	42.919	.04718	32506.
#3	40.711	2002.7	455.20	2.7065	41.681	.04185	31400.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	500000.	50000.	50000.	50000.	25000.	500000.
Low	-5.0000	-50.000	-50.000	-50.000	-5.0000	-1.0000	-100.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.955	2.7076	11.337	997.58	153860.	1074.0	5.1595
SDev	2.228	.6280	1.378	72.31	10776.	183.8	1.0495
%RSD	11.164	23.194	12.152	7.2489	7.0039	17.110	20.342
#1	22.524	3.3386	12.889	1079.0	165970.	1263.7	6.0173
#2	18.555	2.7015	10.865	972.79	150280.	1061.5	5.4721
#3	18.787	2.0827	10.257	940.93	145330.	896.83	3.9892
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	50000.	50000.	250000.	250000.	25000.
Low	-2.5000	-5.0000	-5.0000	-10.000	-50.000	-2500.0	-25.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2825.5	1245.8	-4.4857	-110.13	13.192	510.43	8162.6
SDev	213.9	91.5	2.2625	514.74	3.310	39.50	569.8
%RSD	7.5720	7.3411	50.438	467.38	25.092	7.7395	6.9808
#1	3065.9	1348.6	-5.6602	402.46	11.114	505.73	8801.9
#2	2754.4	1215.7	-5.9193	-105.86	17.010	473.49	7977.5
#3	2656.1	1173.3	-1.8775	-627.00	11.454	552.08	7708.3
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	50000.	50000.	1000000.	50000.	100000.	50000.
Low	-100.00	-5.0000	-10.000	-2500.0	-20.000	-150.00	-25.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.656	-31.603	1105.6	-3.7437	44.651	54.766	89.971
SDev	9.976	25.125	94.9	8.9041	3.152	4.309	52.234
%RSD	59.898	79.502	8.5842	237.84	7.0583	7.8677	58.057
#1	27.098	-55.714	1213.5	-4.4118	48.184	59.630	36.404
#2	15.649	-5.5731	1068.4	-12.295	43.637	53.242	92.747
#3	7.2210	-33.523	1035.0	5.4756	42.131	51.427	140.76
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	107000.	50000.	25000.	50000.	50000.

Low	-30.000	-100.00	-250.00	-50.000	-25.000	-7.5000	-1000.0
Elem	V	Zn					
Units	ppm	ppm					
Avge	8.6491	3215.8					
SDev	1.1033	233.2					
%RSD	12.757	7.2520					
#1	8.9436	3477.3					
#2	7.4284	3140.7					
#3	9.5753	3029.4					
Errors	LC Pass	LC Pass					
High	50000.	50000.					
Low	-5.0000	-10.000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3355	--	--	--	--	--	--
SDev	30.91673	--	--	--	--	--	--
%RSD	.9213873	--	--	--	--	--	--
#1	3324	--	--	--	--	--	--
#2	3357	--	--	--	--	--	--
#3	3385	--	--	--	--	--	--

Method: ICP3Y Sample Name: CPXAH 2X FOR Zn Operator: THA
Run Time: 01/28/99 02:18:54
Comment: 9019172
Mode: CONC Corr. Factor: 200

still #14 1-28-99

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.0372	30167.	97.333	159.77	483.84	.44886	50258.
SDev	2.0644	5431.	17.109	27.43	86.87	.14310	8656.
%RSD	22.843	18.003	17.577	17.170	17.955	31.882	17.224
#1	11.040	35038.	116.29	184.04	562.10	.57489	58109.
#2	9.1552	31151.	92.679	165.28	499.07	.47840	51692.
#3	6.9164	24311.	83.033	130.01	390.36	.29329	40975.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	200000.	20000.	20000.	20000.	10000.	200000.
Low	-2.0000	-20.000	-20.000	-20.000	-2.0000	-.40000	-40.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	457.81	22.673	73.896	320.41	12905.	44883.	44.602
SDev	75.58	5.011	12.687	57.68	2203.	8083.	8.187
%RSD	16.509	22.100	17.168	18.003	17.073	18.010	18.357
#1	525.00	27.238	85.547	372.48	14887.	52256.	51.644
#2	472.44	23.469	75.760	330.35	13297.	46152.	46.543
#3	375.98	17.312	60.380	258.40	10532.	36240.	35.618
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	20000.	20000.	20000.	100000.	100000.	10000.
Low	-1.0000	-2.0000	-2.0000	-5.0000	-20.000	-1000.0	-10.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6783.8	463.60	18.954	51505.	25.086	4756.1	4710.3
SDev	1198.8	79.08	5.929	9252.	5.061	865.4	792.5
%RSD	17.672	17.059	31.282	17.962	20.173	18.196	16.825
#1	7859.0	534.67	24.402	59879.	29.373	5526.4	5428.6
#2	7001.4	477.71	19.820	53064.	26.382	4922.4	4842.2
#3	5491.1	378.41	12.639	41573.	19.504	3819.6	3860.1
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	200000.	20000.	20000.	400000.	20000.	40000.	20000.
Low	-40.000	-2.0000	-4.0000	-1000.0	-8.0000	-60.000	-10.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	235.47	.61243	1659.6	353.14	171.80	2698.8	-27.428
SDev	32.49	5.9681	298.4	71.27	30.62	477.2	12.021
%RSD	13.800	974.49	17.982	20.180	17.822	17.681	43.828
#1	262.56	6.5415	1926.9	417.75	199.20	3127.3	-14.962
#2	244.40	.68973	1714.2	364.97	177.45	2784.7	-38.949
#3	199.44	-5.3939	1337.6	276.70	138.75	2184.6	-28.374
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	20000.	20000.	42800.	20000.	10000.	20000.	20000.

Low	-12.000	-40.000	-100.00	-20.000	-10.000	-3.0000	-400.00
Elem	V	Zn					
Units	ppm	ppm					
Avge	31.083	H21005.					
SDev	5.644	3452.					
%RSD	18.158	16.433					
#1	36.226	H24137.					
#2	31.978	H21575.					
#3	25.045	17304.					
Errors	LC Pass	LC High					
High	20000.	20000.					
Low	-2.0000	-4.0000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3350	--	--	--	--	--	--
SDev	22.30967	--	--	--	--	--	--
%RSD	.6659810	--	--	--	--	--	--
#1	3327	--	--	--	--	--	--
#2	3371	--	--	--	--	--	--
#3	3351	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSA Operator: THA
Run Time: 01/28/99 02:22:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00091	494.93	-.01521	.02056	.00264	-.00047	476.05
SDev	.00052	.53	.08597	.00488	.00001	.00011	1.17
%RSD	56.990	.10628	565.13	23.757	.34018	22.353	.24609
#1	-.00096	494.53	.07703	.02142	.00263	-.00040	474.90
#2	-.00037	495.53	-.02957	.01530	.00265	-.00042	477.24
#3	-.00141	494.74	-.09309	.02496	.00263	-.00059	476.01
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00692	.00209	.00488	-.00182	181.45	-.33939	-.00063
SDev	.00185	.00110	.00096	.00138	.35	.20529	.00094
%RSD	26.799	52.395	19.641	75.465	.19319	60.489	150.83
#1	-.00723	.00087	.00432	-.00031	181.10	-.38296	-.00157
#2	-.00493	.00298	.00434	-.00216	181.80	-.11580	.00032
#3	-.00860	.00243	.00599	-.00300	181.43	-.51939	-.00063
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	530.71	.00086	.00162	-.83537	-.00461	.01203	.04313
SDev	.93	.00001	.02382	.19151	.00314	.05758	.02618
%RSD	.17530	1.1069	1468.4	22.925	68.091	478.66	60.700
#1	529.71	.00085	H.02809	-1.0367	-.00101	.07411	H.05297
#2	531.55	.00087	-.01810	-.65551	-.00602	-.03961	H.06296
#3	530.88	.00085	-.00513	-.81390	-.00678	.00158	.01346
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn NR	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01610	.10673	.03238	H.10338	.01909	.00357	.33080
SDev	.01888	.16062	.02007	.06990	.00015	.00062	.20845
%RSD	117.22	150.50	61.984	67.616	.79576	17.394	63.013
#1	.00812	.18869	.04753	H.13723	.01925	.00396	.46373
#2	.00253	-.07834	.00962	H.14991	.01905	.00391	.43812
#3	.03766	H.20983	.03998	.02300	.01896	.00286	.09056
Errors	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00450	-.00293
SDev	.00102	.00117
%RSD	22.533	39.948
#1	.00500	-.00235
#2	.00518	-.00216
#3	.00334	-.00428

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3431	--	--	--	--	--	--
SDev	12.26128	--	--	--	--	--	--
%RSD	.3574158	--	--	--	--	--	--
#1	3442	--	--	--	--	--	--
#2	3417	--	--	--	--	--	--
#3	3433	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:29:05 AM page 1

Method: ICP3Y Sample Name: ICSAB Operator: THA
Run Time: 01/28/99 02:25:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98399	461.39	1.8048	2.0339	.48343	.48891	444.54
SDev	.00139	.50	.1471	.0045	.00032	.00021	1.17
%RSD	.14142	.10751	8.1502	.22345	.06605	.04234	.26381
#1	.98242	460.84	1.6560	2.0289	.48337	.48902	443.43
#2	.98448	461.53	1.8082	2.0377	.48377	.48867	444.43
#3	.98507	461.81	1.9502	2.0352	.48314	.48903	445.77
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97559	.45713	.47755	.49120	169.48	50.028	1.0059
SDev	.00090	.00147	.00070	.00164	.36	.418	.0006
%RSD	.09267	.32104	.14685	.33339	.21222	.83508	.06175
#1	.97654	.45566	.47683	.49303	169.14	50.332	1.0058
#2	.97547	.45859	.47824	.48988	169.44	50.200	1.0066
#3	.97475	.45715	.47757	.49068	169.85	49.552	1.0054
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	494.47	.47103	.93708	49.961	.91716	1.8384	.98666
SDev	.55	.00066	.01399	.419	.02227	.1328	.01168
%RSD	.11197	.14085	1.4930	.83960	2.4278	7.2214	1.1839
#1	493.93	.47030	.94076	50.367	.92519	1.9861	.97753
#2	494.45	.47119	.94886	49.986	.93431	1.7997	.98262
#3	495.04	.47159	.92162	49.530	.89200	1.7292	.99982
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.91714	4.7297	21.268	9.5187	.95932	.94190	9.4289
SDev	.05423	.0631	.046	.0971	.00044	.00109	.2876
%RSD	5.9132	1.3350	.21486	1.0202	.04582	.11551	3.0507
#1	.85527	4.7367	21.227	9.4193	.95952	.94172	9.2013
#2	.95649	4.7890	21.259	9.6133	.95963	.94090	9.3331
#3	.93965	4.6633	21.317	9.5235	.95882	.94306	9.7522
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.47568	.95765
SDev	.00027	.00219
%RSD	.05745	.22822
#1	.47599	.95705
#2	.47551	.95583
#3	.47554	.96008

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3439	--	--	--	--	--	--
SDev	7.853171	--	--	--	--	--	--
%RSD	.2283277	--	--	--	--	--	--
#1	3445	--	--	--	--	--	--
#2	3442	--	--	--	--	--	--
#3	3431	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:32:36 AM page 1

Method: ICP3Y - Sample Name: CCV7 Operator: THA
Run Time: 01/28/99 02:29:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51952	5.2067	.98405	.50740	.50651	.50847	20.596
SDev	.00239	.0244	.01429	.00618	.00026	.00083	.035
%RSD	.46026	.46853	1.4521	1.2187	.05240	.16401	.16997
#1	.51790	5.2065	.96756	.50253	.50633	.50779	20.568
#2	.51839	5.1824	.99179	.51436	.50639	.50821	20.586
#3	.52226	5.2312	.99280	.50532	.50682	.50940	20.635
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51710	.50945	.51122	.51310	5.1926	101.91	5.0877
SDev	.00551	.00481	.00157	.00061	.0049	.36	.0024
%RSD	1.0647	.94311	.30719	.11991	.09460	.34935	.04774
#1	.51244	.51142	.51000	.51379	5.1872	102.22	5.0905
#2	.51570	.50397	.51067	.51289	5.1938	101.98	5.0865
#3	.52318	.51296	.51299	.51262	5.1968	101.52	5.0861
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.812	.51215	.52052	207.42	.52166	5.1416	.52766
SDev	.043	.00098	.00721	.67	.01655	.0638	.01095
%RSD	.20584	.19171	1.3846	.32390	3.1731	1.2400	2.0753
#1	20.789	.51113	.52762	208.18	.51006	5.1718	.54030
#2	20.785	.51221	.52073	206.91	.51430	5.1846	.52145
#3	20.861	.51310	.51321	207.16	.54062	5.0683	.52122
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49802	5.0597	110.76	5.2587	.50855	.50393	5.0657
SDev	.01812	.0777	.18	.0689	.00090	.00152	.0419
%RSD	3.6393	1.5364	.16516	1.3111	.17746	.30198	.82803
#1	.51409	5.1109	110.59	5.3006	.50768	.50221	5.0389
#2	.50158	5.0981	110.75	5.1792	.50850	.50448	5.0441
#3	.47837	4.9703	110.95	5.2964	.50948	.50510	5.1140
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50989	.51648
SDev	.00181	.00225
%RSD	.35507	.43568
#1	.50983	.51389
#2	.50811	.51784
#3	.51173	.51772

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3366	--	--	--	--	--	--
SDev	9.358047	--	--	--	--	--	--
%RSD	.2779990	--	--	--	--	--	--
#1	3356	--	--	--	--	--	--
#2	3374	--	--	--	--	--	--
#3	3369	--	--	--	--	--	--

Analysis Report Thu 01-28-99 02:36:07 AM page 1

Method: ICP3Y - Sample Name: CCB7 Operator: THA
Run Time: 01/28/99 02:32:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00063	.02509	-.03068	.00041	.00072	-.00028	.03840
SDev	.00102	.00638	.03375	.00069	.00020	.00013	.00283
%RSD	160.24	25.426	110.02	167.21	27.905	45.660	7.3818
#1	-.00078	.02452	-.04797	.00121	.00071	-.00021	.03637
#2	.00045	.03174	-.05228	.00002	.00092	-.00043	.04164
#3	-.00157	.01902	.00822	.00001	.00052	-.00020	.03719
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00036	-.00223	.00195	.00124	.02038	-.13525	.00128
SDev	.00154	.00030	.00383	.00055	.00019	.21538	.00002
%RSD	422.96	13.653	196.70	44.083	.92641	159.25	1.1780
#1	.00132	-.00188	.00360	.00093	.02032	-.23903	.00127
#2	-.00171	-.00242	.00468	.00188	.02060	.11237	.00130
#3	-.00071	-.00239	-.00243	.00092	.02023	-.27909	.00127
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04097	.00044	.00092	.07862	.00029	.03235	.00651
SDev	.01816	.00054	.00375	.16060	.00450	.01596	.01101
%RSD	44.327	123.26	406.28	204.26	1549.2	49.345	169.04
#1	.05162	.00001	-.00061	.26003	-.00416	.04247	.01319
#2	.05130	.00104	.00519	.02123	.00484	.04062	-.00619
#3	.02000	.00026	-.00181	-.04539	.00020	.01395	.01254
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00604	-.02618	.08358	.02111	.00030	-.00017	-.01762
SDev	.01356	.00730	.01911	.02331	.00001	.00063	.04579
%RSD	224.44	27.896	22.870	110.39	1.8658	376.00	259.88
#1	.00935	-.01905	.10118	.01739	.00029	-.00054	.03493
#2	-.01129	-.03364	.08631	-.00011	.00030	.00056	-.03885
#3	-.01619	-.02585	.06324	.04606	.00029	-.00053	-.04895
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00212	.00171
SDev	.00170	.00041
%RSD	79.969	24.153
#1	.00173	.00124
#2	.00398	.00203
#3	.00065	.00185
Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3395	--	--	--	--	--	--
SDev	26.73433	--	--	--	--	--	--
%RSD	.7874033	--	--	--	--	--	--
#1	3404	--	--	--	--	--	--
#2	3365	--	--	--	--	--	--
#3	3417	--	--	--	--	--	--

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:38:18

BATCH NUMBER: 9027151 PREP DATE: 1/28/99
DUE DATE 12/15/98 INITIALS: AVC

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIG
D8K100199 SOLID	CNA9P DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9Q DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9R DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9T DUE DATE:	01	x 50.03 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9V DUE DATE:	01	x 50.01 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9W DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNA9X DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100199 SOLID	CNAA0 DUE DATE:	01	x 49.98 g 12/15/98	_____g	_____g	_____
D8K100200 SOLID	CNAAA DUE DATE:	01	x 50.00 g 12/15/98	_____g	_____g	_____
D8K100200 SOLID	CNAAC DUE DATE:	01	x 50.03 g 12/15/98	_____g	_____g	_____
	CNAACS		50.03 g	_____g	_____g	_____
	CNAACD		50.00 g	_____g	_____g	_____
D9A260000 SOLID	CQ7RQB DUE DATE:	01	x 50.01 g 0/00/00	_____g	_____g	_____
D9A270000 SOLID	CQ8T1C DUE DATE:	01	x 50.00 g 0/00/00	_____g	_____g	_____
	CQ8T1L		50.01 g	_____g	_____g	_____

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:38:18

BATCH NUMBER: 9027151 PREP DATE: 1/28/99
DUE DATE 12/15/98 INITIALS: MLS

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: brought to 50g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

CU FE MO

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS					

RQC057 Quanterra Incorporated Run Date: ~~1/25/99~~ 1-28-99
METALS PREP LOG/BATCH SUMMARY Time: 14:35:20

BATCH NUMBER: 9021151 PREP DATE: 1/26/99
DUE DATE 2/01/99 INITIALS:

	LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
1	D9A200129	CQ3ER	01	X 50.15 g	_____g	_____g	_____g
	WATER	DI DUE DATE:		2/01/99			
2		CQ3ERS		50.07 g	_____g	_____g	_____g
3		CQ3ERD		50.06 g	_____g	_____g	_____g
4	D9A220207	CQ6DP	01	X 50.16 g	_____g	_____g	_____g
	WATER	DI DUE DATE:		2/05/99			
5	D9A210000	CQ45VB	01	X 50.02 g	_____g	_____g	_____g
	WATER	DUE DATE:		0/00/00			
6		CQ45VC		50.09 g	_____g	_____g	_____g
7		CQ45VL		50.10 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: Rec'd 50 ml

B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS

SPIKING WITNESSED BY _____

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

1-28-99
Run Date: ~~1/25/99~~
Time: 14:35:20

BATCH NUMBER: 9021151

PREP DATE: 1/26/99
DUE DATE 2/01/99

INITIALS:

ICP ELEMENTS WITHIN THE BATCH:

CA CR FE KX MG NA NI VX

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	___	___

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:39:00

BATCH NUMBER: 9027153

PREP DATE: 1/28/99
DUE DATE 1/19/99

INITIALS: ARG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT		GFA/WEIGHT	FLA/WEIGH
D9A050121	CPPP4	01	X 1.03 g	_____g	5Y	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPWR	01	X .98 g	_____g	5Y	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPWT	01	X 1.01 g	_____g	5	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPWV	01	X .97 g	_____g	2X	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPWW	01	X 1.01 g	_____g	5Y	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPWX	01	X .99 g	_____g	5Y	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPX0	01	X 1.00 g	_____g	5X	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A050121	CPPX1	01	X 1.01 g	_____g	1Yok	_____g	_____g
SOLID	TO DUE DATE:		1/19/99				
D9A120174	CPW7F	01	X 1.00 g	_____g	5Y	_____g	_____g
SOLID	TO DUE DATE:		2/04/99				
	CPW7FS		1.01 g	_____g		_____g	_____g
	CPW7FD		.99 g	_____g		_____g	_____g
D9A260164	CQ8E6	01	X .99 g	_____g		_____g	_____g
SOLID	TO DUE DATE:		2/12/99				
D9A260164	CQ8EA	01	X .97 g	_____g		_____g	_____g
SOLID	TO DUE DATE:		2/12/99				
D9A260164	CQ8EE	01	X 1.00 g	_____g		_____g	_____g
SOLID	TO DUE DATE:		2/12/99				
D9A260164	CQ8EN	01	X 1.03 g	_____g		_____g	_____g
SOLID	TO DUE DATE:		2/12/99				
D9A270000	CQ8TEB	01	X 1.00 g	_____g		_____g	_____g
SOLID	DUE DATE:		0/00/00				
	CQ8TEC		1.00 g	_____g		_____g	_____g

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:39:00

BATCH NUMBER: 9027153 PREP DATE: 1/28/99
DUE DATE 1/19/99 INITIALS: AB

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
	CQ8TEL		1.00 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: 1.0 g Glass Beads added to Blank LCS DCS. Final vol. Brought to 100g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

	AG	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE	KX	MG	MN	MO	NA	NI	PB	SB	SE	TL	VX
MS/MSD 1:				ICP - 1				ICP - 2			GFAA		HG		ODD							
MS/MSD 2:				ICP - 1				ICP - 2			GFAA		HG		ODD							
MS/MSD 3:				ICP - 1				ICP - 2			GFAA		HG		ODD							
CHECK :				ICP - 1				ICP - 2			GFAA		HG		ODD							
CHECK DUP:				ICP - 1				ICP - 2			GFAA		HG		ODD							
STANDARD NUMBERS				_____				_____			____		___		___							

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: ~~1/25/99~~ 1/28/99
Time: 14:35:44

BATCH NUMBER: 9025170

PREP DATE: 1/26/99
DUE DATE 2/04/99

INITIALS:

	LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
1	D9A220240 WATER	CQ6KM DI DUE DATE:	01	x 50.66 g 2/04/99	____g	____g	____g
2		CQ6KMS		50.08 g	____g	____g	____g
3		CQ6KMD		50.07 g	____g	____g	____g
4	D9A220240 WATER	CQ6KQ DI DUE DATE:	01	x 49.98 g 2/04/99	____g	____g	____g
5	D9A220240 WATER	CQ6KR DI DUE DATE:	01	x 49.93 g 2/04/99	____g	____g	____g
6	D9A220240 WATER	CQ6KT DI DUE DATE:	01	x 50.13 g 2/04/99	____g	____g	____g
7	D9A220240 WATER	CQ6KX DI DUE DATE:	01	x 50.02 g 2/04/99	____g	____g	____g
8	D9A220240 WATER	CQ6L0 DI DUE DATE:	01	x 50.01 g 2/04/99	____g	____g	____g
9	D9A220240 WATER	CQ6L1 DI DUE DATE:	01	x 50.05 g 2/04/99	____g	____g	____g
10	D9A220240 WATER	CQ6L3 DI DUE DATE:	01	x 50.16 g 2/04/99	____g	____g	____g
11	D9A220242 WATER	CQ6LC DI DUE DATE:	01	x 50.09 g 2/04/99	____g	____g	____g
12	D9A220242 WATER	CQ6LE DI DUE DATE:	01	x 50.07 g 2/04/99	____g	____g	____g
13	D9A220242 WATER	CQ6LF DI DUE DATE:	01	x 50.19 g 2/04/99	____g	____g	____g
14	D9A220242 WATER	CQ6LG DI DUE DATE:	01	x 49.97 g 2/04/99	____g	____g	____g
15	D9A220242 WATER	CQ6LH DI DUE DATE:	01	x 50.14 g 2/04/99	____g	____g	____g
16	D9A220242 WATER	CQ6LJ DI DUE DATE:	01	x 50.09 g 2/04/99	____g	____g	____g

RQC057 Quanterra Incorporated Run Date: 1-28-99 ~~1/25/99~~
METALS PREP LOG/BATCH SUMMARY Time: 14:35:44

BATCH NUMBER: 9025170 PREP DATE: 1/26/99
DUE DATE 2/04/99 INITIALS: W

	LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
17	D9A220147	CQ5PC	01	X 50.07 g	____g	____g	____g
	WATER	DI DUE DATE:		2/05/99			
19	D9A220147	CQ5RK	01	X 50.15 g	____g	____g	____g
	WATER	DI DUE DATE:		2/05/99			
19	D9A220147	CQ5RV	01	X 50.02 g	____g	____g	____g
	WATER	DI DUE DATE:		2/05/99			
20	D9A220147	CQ5T4	01	X 49.58 g	____g	____g	____g
	WATER	DI DUE DATE:		2/05/99			
21	D9A220147	CQ5TG	01	X 50.03 g	____g	____g	____g
	WATER	DI DUE DATE:		2/05/99			
	D9A220147	CQ5TH	01	X 50.13 g	____g	____g	____g
22	WATER	DI DUE DATE:		2/05/99			
23	D9A250000	CQ7C5B	01	X 50.06 g	____g	____g	____g
	WATER	DUE DATE:		0/00/00			
24		CQ7C5C		50.01 g	____g	____g	____g
25		CQ7C5L		49.55 g	____g	____g	____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG ____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: Rec'd 20 5oml

B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS

SPIKING WITNESSED BY ____

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1-25-99
Time: 14:35:44

BATCH NUMBER: 9025170

PREP DATE: 1/26/99
DUE DATE 2/04/99

INITIALS: W

ICP ELEMENTS WITHIN THE BATCH:

	AG	AL	AS	BA	BE	CD	FE	NI	PB	SE	SN	TL

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	___	___

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/28/99
Time: 10:11:15

BATCH NUMBER: 9021162

PREP DATE: 1/28/99
DUE DATE 2/03/99

INITIALS: AVG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
D9A200177	CQ3VH	01	x 50.01 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/03/99			
	CQ3VHS		50.00 g	_____g	_____g	_____g
	CQ3VHD		49.98 g	_____g	_____g	_____g
D9A210156	CQ4L5	01	x 50.01 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/03/99			
D9A210156	CQ4LD	01	x 49.99 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/03/99			
D9A160136	CQ1DN	01	x 49.99 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/05/99			
D9A200125	CQ3G2	01	x 50.00 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/12/99			
D9A200125	CQ3G4	01	x 50.01 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/12/99			
D9A200125	CQ3G5	01	x 50.00 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/12/99			
D9A220205	CQ6D7	01	x 50.00 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A220205	CQ6DA	01	x 50.01 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A220205	CQ6DD	01	x 49.99 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A220205	CQ6DE	01	x 50.01 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A220205	CQ6DF	01	x 49.98 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A220205	CQ6DG	01	x 49.99 g	_____g	_____g	_____g
WATER	TO DUE DATE:		2/15/99			
D9A210000	CQ470B	01	x 50.00 g	_____g	_____g	_____g
WATER	DUE DATE:		0/00/00			
	CQ470C		50.00 g	_____g	_____g	_____g

RQC057 Quanterra Incorporated Run Date: 1/28/99
METALS PREP LOG/BATCH SUMMARY Time: 10:11:15

BATCH NUMBER: 9021162 PREP DATE: 1/28/99
DUE DATE 2/03/99 INITIALS: ALG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIG
	CQ470L		50.00 g	_____ g	_____ g	_____

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: Brought to 50g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PD
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

	AG	AS	BA	BE	CD	CO	CR	CU	FE	MN	NI	PB	SB	SE	SN	VX	ZN
MS/MSD 1:	ICP - 1							ICP - 2			GFAA		HG		ODD		
MS/MSD 2:	ICP - 1							ICP - 2			GFAA		HG		ODD		
MS/MSD 3:	ICP - 1							ICP - 2			GFAA		HG		ODD		
CHECK :	ICP - 1							ICP - 2			GFAA		HG		ODD		
CHECK DUP:	ICP - 1							ICP - 2			GFAA		HG		ODD		
STANDARD NUMBERS	_____							_____			____		____		____		

```
:       Instrument Upload                                    Run Log - Page  1 :
:       Started Mon Feb  1 20:27:58 1999 by ANDERSOT                           :
:       Data File: UPL$DEN_DATA_ROOT:<TJA>129L.002;1                           :
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#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	CAL	1	29-JAN-1999	08:46:00			002
2	CAL	1	29-JAN-1999	08:49:00			002
3	HIGH	1	29-JAN-1999	08:53:00			002
4	ICV	1	29-JAN-1999	08:56:00			002
5	ICB	1	29-JAN-1999	09:00:00			002
6	CRI	1	29-JAN-1999	09:03:00			002
7	ICSA	1	29-JAN-1999	09:07:00			002
8	ICSAB	1	29-JAN-1999	09:10:00			002
9	CCV1	1	29-JAN-1999	09:14:00			002
10	CCB1	1	29-JAN-1999	09:17:00			002
11	CPXAH	5	29-JAN-1999	09:27:00	9019172	D9A130190	002
12	CQ7RQBW	1	29-JAN-1999	09:30:00	9027151	D9A260000	002
13	CQ8T1CW	1	29-JAN-1999	09:34:00	9027151	D9A270000	002
14	CQ8T1LW	1	29-JAN-1999	09:37:00	9027151	D9A270000	002
15	CNA9PW	1	29-JAN-1999	09:41:00	9027151	D8K100199	002
16	CNA9QW	1	29-JAN-1999	09:44:00	9027151	D8K100199	002
17	CNA9RW	1	29-JAN-1999	09:48:00	9027151	D8K100199	002
18	CNA9TW	1	29-JAN-1999	09:51:00	9027151	D8K100199	002
19	CNA9VW	1	29-JAN-1999	09:55:00	9027151	D8K100199	002
20	CNA9WW	1	29-JAN-1999	09:59:00	9027151	D8K100199	002
21	CCV2	1	29-JAN-1999	10:02:00			002
22	CCB2	1	29-JAN-1999	10:06:00			002
23	CNA9XW	1	29-JAN-1999	10:09:00	9027151	D8K100199	002
24	CNAA0W	1	29-JAN-1999	10:13:00	9027151	D8K100199	002
25	CNAAAW	1	29-JAN-1999	10:16:00	9027151	D8K100200	002
26	CNAACW	1	29-JAN-1999	10:20:00	9027151	D8K100200	002
27	CNAACPW	5	29-JAN-1999	10:23:00			002
28	CNAACSW	1	29-JAN-1999	10:27:00	9027151	D8K100200	002
29	CNAACDW	1	29-JAN-1999	10:30:00	9027151	D8K100200	002
30	CCV3	1	29-JAN-1999	10:34:00			002
31	CCB3	1	29-JAN-1999	10:37:00			002
32	CQ45VBF	1	29-JAN-1999	10:51:00	9021151	D9A210000	002
33	CQ45VCF	1	29-JAN-1999	10:55:00	9021151	D9A210000	002
34	CQ45VLF	1	29-JAN-1999	10:58:00	9021151	D9A210000	002
35	CQ3ERF	1	29-JAN-1999	11:02:00	9021151	W50591B	002 — D9A200129
36	CQ3ERPF	5	29-JAN-1999	11:05:00			002
37	CQ3ERSF	1	29-JAN-1999	11:09:00	9021151	W50591B	002
38	CQ3ERDF	1	29-JAN-1999	11:13:00	9021151	W50591B	002
39	CQ6DPF	1	29-JAN-1999	11:16:00	9021151	D9A220207	002
40	CCV4	1	29-JAN-1999	11:19:00			002
41	CCB4	1	29-JAN-1999	11:23:00			002
42	CQ8TEB	1	29-JAN-1999	11:33:00	9027153	D9A270000	002
43	CQ8TEC	1	29-JAN-1999	11:37:00	9027153	D9A270000	002
44	CQ8TEL	1	29-JAN-1999	11:41:00	9027153	D9A270000	002

---------- (continued) ----------

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CPPP4	016	29-JAN-1999	11:44:00	9027153	D9A050121	002
46	CPPWR	016	29-JAN-1999	11:48:00	9027153	D9A050121	002
47	CPPWT	016	29-JAN-1999	11:52:00	9027153	D9A050121	002
48	CPPWV	016	29-JAN-1999	11:56:00	9027153	D9A050121	002
49	CPPWW	016	29-JAN-1999	12:00:00	9027153	D9A050121	002
50	CPPWX	016	29-JAN-1999	12:04:00	9027153	D9A050121	002
51	CPPX0	016	29-JAN-1999	12:08:00	9027153	D9A050121	002
52	CCV5	1	29-JAN-1999	12:11:00			002
53	CCB5	1	29-JAN-1999	12:15:00			002
54	CPPX1	016	29-JAN-1999	12:19:00	9027153	D9A050121	002
55	CPW7F	1	29-JAN-1999	12:23:00	9027153	D9A120174	002
56	CPW7FP	5	29-JAN-1999	12:27:00			002
57	CPW7FZ	1	29-JAN-1999	12:31:00	9027153	D9A120174	002
58	CPW7FS	1	29-JAN-1999	12:34:00	9027153	D9A120174	002
59	CPW7FD	1	29-JAN-1999	12:38:00	9027153	D9A120174	002
60	CQ8E6	1	29-JAN-1999	12:42:00	9027153	D9A260164	002
61	CQ8EA	1	29-JAN-1999	12:46:00	9027153	D9A260164	002
62	CQ8EE	1	29-JAN-1999	12:50:00	9027153	D9A260164	002
63	CQ8EN	1	29-JAN-1999	12:53:00	9027153	D9A260164	002
64	CCV6	1	29-JAN-1999	12:57:00			002
65	CCB6	1	29-JAN-1999	13:01:00			002
66	CPW7F	NOT USED	29-JAN-1999	13:08:00	9027153	D9A120174	002
67	CPW7FP	NOT USED	29-JAN-1999	13:12:00			002
68	CPW7FZ	NOT USED	29-JAN-1999	13:16:00	9027153	D9A120174	002
69	CPW7FS	NOT USED	29-JAN-1999	13:20:00	9027153	D9A120174	002
70	CPW7FD	NOT USED	29-JAN-1999	13:23:00	9027153	D9A120174	002
71	ICSA	1	29-JAN-1999	13:27:00			002
72	ICSAB	1	29-JAN-1999	13:31:00			002
73	CCV7	1	29-JAN-1999	13:35:00			002
74	CCB7	1	29-JAN-1999	13:39:00			002
75	CQ7C5BF	1	29-JAN-1999	14:34:00	9025170	D9A250000	002
76	CQ7C5CF	1	29-JAN-1999	14:38:00	9025170	D9A250000	002
77	CQ7C5LF	1	29-JAN-1999	14:42:00	9025170	D9A250000	002
78	CQ6KMF	1	29-JAN-1999	14:47:00	9025170	W56591B	002
79	CQ6KMPF	5	29-JAN-1999	14:51:00			002
80	CQ6KMSF	1	29-JAN-1999	14:56:00	9025170	W56591B	002
81	CQ6KMDF	1	29-JAN-1999	15:00:00	9025170	W56591B	002
82	CQ6KQF	016	29-JAN-1999	15:04:00	9025170	W56591B	002
83	CQ6KRF	016	29-JAN-1999	15:08:00	9025170	W56591B	002
84	CQ6KTF	016	29-JAN-1999	15:13:00	9025170	W56591B	002
85	CCV8	1	29-JAN-1999	15:17:00			002
86	CCB8	1	29-JAN-1999	15:21:00			002
87	CQ6KXF	016	29-JAN-1999	15:25:00	9025170	W56591B	002
88	CQ6L0F	016	29-JAN-1999	15:30:00	9025170	W56591B	002

D9A220240

(continued)

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
89	CQ6L1F	016	29-JAN-1999	15:34:00	9025170	W56591B	002
90	CQ6L3F	016	29-JAN-1999	15:38:00	9025170	W56591B	002
91	CQ6LCF	1	29-JAN-1999	15:42:00			002
92	CQ6LEF	1	29-JAN-1999	15:47:00			002
93	CQ6LFF	1	29-JAN-1999	15:51:00			002
94	CQ6LGF	1	29-JAN-1999	15:55:00			002
95	CQ6LHF	1	29-JAN-1999	15:59:00			002
96	CQ6LJF	1	29-JAN-1999	16:03:00			002
97	CCV9	1	29-JAN-1999	16:08:00			002
98	CCB9	1	29-JAN-1999	16:12:00			002
99	CQ5PCF	1	29-JAN-1999	16:16:00	9025170	D9A220147	002
100	CQ5RKF	1	29-JAN-1999	16:20:00	9025170	D9A220147	002
101	CQ5RVF	1	29-JAN-1999	16:24:00	9025170	D9A220147	002
102	CQ5T4F	1	29-JAN-1999	16:29:00	9025170	D9A220147	002
103	CQ5TGF	1	29-JAN-1999	16:33:00	9025170	D9A220147	002
104	CQ5THF	1	29-JAN-1999	16:37:00	9025170	D9A220147	002
105	CQ470B	1	29-JAN-1999	16:41:00	9021162	D9A210000	002
106	CQ470C	1	29-JAN-1999	16:46:00	9021162	D9A210000	002
107	CQ470L	1	29-JAN-1999	16:50:00	9021162	D9A210000	002
108	CQ3VH	1	29-JAN-1999	16:54:00	9021162	D9A200177	002
109	CCV10	1	29-JAN-1999	16:58:00			002
110	CCB10	1	29-JAN-1999	17:02:00			002
111	CQ3VHP	5	29-JAN-1999	17:06:00			002
112	CQ3VHS	1	29-JAN-1999	17:11:00	9021162	D9A200177	002
113	CQ3VHD	1	29-JAN-1999	17:15:00	9021162	D9A200177	002
114	CQ4L5	1	29-JAN-1999	17:19:00	9021162	W95091E	002
115	CQ4LD	1	29-JAN-1999	17:23:00	9021162	W95091E	002
116	CQ1DN	1	29-JAN-1999	17:27:00	9021162	D9A160136	002
117	CQ3G2	1	29-JAN-1999	17:32:00	9021162	D9A200125	002
118	CQ3G4	1	29-JAN-1999	17:36:00	9021162	D9A200125	002
119	CQ3G5	1	29-JAN-1999	17:40:00	9021162	D9A200125	002
120	CQ6D7	1	29-JAN-1999	17:44:00	9021162	D9A220205	002
121	CCV11	1	29-JAN-1999	17:48:00			002
122	CCB11	1	29-JAN-1999	17:53:00			002
123	CQ6DA	1	29-JAN-1999	17:57:00	9021162	D9A220205	002
124	CQ6DD	1	29-JAN-1999	18:01:00	9021162	D9A220205	002
125	CQ6DE	1	29-JAN-1999	18:05:00	9021162	D9A220205	002
126	CQ6DF	1	29-JAN-1999	18:09:00	9021162	D9A220205	002
127	CQ6DG	1	29-JAN-1999	18:14:00	9021162	D9A220205	002
128	CQ73X	20	29-JAN-1999	18:18:00	9025157	W64591	002
129	ICSA	1	29-JAN-1999	18:22:00			002
130	ICSAB	1	29-JAN-1999	18:26:00			002
131	CCV12	1	29-JAN-1999	18:30:00			002
132	CCB12	1	29-JAN-1999	18:35:00			002

D9A220240

D9A220247

D9A210151

D9A230153

End of Report

Method: ICP3Y Sample Name: CAL BLK Operator:
Run Time: 01/29/99 08:46 Filename: 990129L
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Ag	Al	As	B	Ba	Be
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00139	.02397	.00231	0	-.00009	-.00343
SDev	.00073	.00149	.00524	.00055	.00016	.00015
%RSD	52.9614	6.22655	226.268	279040	173.205	4.39995

Elems	Ca	Cd	Co	Cr	Cu	Fe
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.29989	.00177	-.00101	.00232	.00037	0
SDev	.00121	.00182	.00131	.00171	.00015	0
%RSD	.40516	103.009	128.921	73.7824	42.9749	0

Elems	K	Li	Mg	Mn	Mo	Na
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00734	-.00046	-.00101	.0012	.00688	.01654
SDev	.00115	.00016	.00137	.00032	.00307	.00253
%RSD	15.7661	34.7876	135	26.81	44.6519	15.3474

Elems	Ni	P	Pb	Sb	Se	SiO2
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00064	-.02192	.00906	.00042	0	.01226
SDev	.00253	.00217	.01311	.01716	.00255	.00095
%RSD	394.401	9.9389	144.68	4068.06	31361.3	7.76469

Elems	Sn	Sr	Ti	Tl	V	Zn
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00147	.00065	.00027	.00008	.00074	.00455
SDev	.00264	.00016	.00048	.00213	.00064	.00014
%RSD	178.917	25.2817	172.813	2463.51	86.6046	3.26153

Elems	*Y
Units	
Avge	3587.9
SDev	17.5899
%RSD	.49025

Run By WGL 1-29-99
Entered By THA 2-2-99
ICP-002
SOP# CORP-MT-0001REV

Standardization Rpt. Fri 01-29-99 08:52:44 AM page 1

Method: ICP3Y Standard: CAL STD

Elem	Ag	Al	As	B	Ba	Be	Ca
Avge	.71929	1.2902	.31728	.23720	1.5014	1.4846	11.597
SDev	.00474	.0100	.00837	.00240	.0117	.0117	.111
%RSD	.65936	.77590	2.6368	1.0133	.77645	.79077	.95309
#1	.71501	1.2787	.32599	.23512	1.4879	1.4712	11.479
#2	.72439	1.2969	.30930	.23983	1.5073	1.4929	11.699
#3	.71847	1.2950	.31657	.23664	1.5089	1.4898	11.613

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Avge	.84389	.55586	.85293	.32657	.86349	4.1030	3.1705
SDev	.00713	.00483	.00641	.00249	.00907	.0275	.0353
%RSD	.84550	.86858	.75090	.76323	1.0504	.66903	1.1137
#1	.84052	.55060	.84648	.32371	.85301	4.0714	3.1358
#2	.85209	.56008	.85929	.32832	.86880	4.1169	3.1694
#3	.83906	.55691	.85300	.32766	.86864	4.1208	3.2064

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Avge	6.8691	1.1662	1.2210	1.6558	1.3502	.96551	.61489
SDev	.0561	.0105	.0149	.0110	.0148	.00876	.01309
%RSD	.81692	.89756	1.2235	.66544	1.0956	.90762	2.1287
#1	6.8044	1.1543	1.2063	1.6444	1.3460	.97086	.62102
#2	6.9039	1.1741	1.2205	1.6664	1.3666	.97027	.62379
#3	6.8991	1.1701	1.2361	1.6565	1.3380	.95539	.59986

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Avge	.71995	.81895	30.414	1.0141	1.6767	.53045	.26841
SDev	.01310	.00669	.221	.0078	.0137	.00493	.00352
%RSD	1.8200	.81674	.72712	.76967	.81904	.93019	1.3117
#1	.70536	.81354	30.179	1.0052	1.6609	.52476	.26437
#2	.72381	.82643	30.618	1.0175	1.6837	.53356	.27010
#3	.73070	.81688	30.444	1.0197	1.6855	.53302	.27078

Elem	V	Zn
Avge	.54577	.43880
SDev	.00456	.00508
%RSD	.83478	1.1567
#1	.54094	.43474
#2	.54999	.44449
#3	.54639	.43717

990129L

129L.002

Run By wlong 1-29-99

Entered THA 2-1-99

ICP-002
SOP # CORP-MT-004 DCN

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3502	--	--	--	--	--	--
SDev	28.77827	--	--	--	--	--	--
%RSD	.8217210	--	--	--	--	--	--
#1	3522	--	--	--	--	--	--
#2	3469	--	--	--	--	--	--
#3	3516	--	--	--	--	--	--

Standardization Report Fri 01-29-99 08:52:51 AM page 1

Method: ICP3Y Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag	328.068	CAL STD	CAL BLK	1.38645	-.001934	01/29/99 08:49:36
Al	308.215	CAL STD	CAL BLK	7.88745	-.189090	01/29/99 08:49:36
As	193.696	CAL STD	CAL BLK	6.43169	-.014905	01/29/99 08:49:36
B	249.678	CAL STD	CAL BLK	4.19950	-.000001	01/29/99 08:49:36
Ba	493.409	CAL STD	CAL BLK	.666014	.000062	01/29/99 08:49:36
Be	313.042	CAL STD	CAL BLK	.675020	.002326	01/29/99 08:49:36
Ca	317.933	CAL STD	CAL BLK	3.54081	-1.06189	01/29/99 08:49:36
Cd	228.802	CAL STD	CAL BLK	1.20829	-.002140	01/29/99 08:49:36
Co	228.616	CAL STD	CAL BLK	1.80357	.001839	01/29/99 08:49:36
Cr	267.716	CAL STD	CAL BLK	1.17573	-.002737	01/29/99 08:49:36
Cu	324.754	CAL STD	CAL BLK	3.06065	-.001136	01/29/99 08:49:36
Fe	259.940	CAL STD	CAL BLK	11.5780	.000000	01/29/99 08:49:36
K	766.491	CAL STD	CAL BLK	48.8319	-.358559	01/29/99 08:49:36
Li	670.784	CAL STD	CAL BLK	3.15361	.001466	01/29/99 08:49:36
Mg	279.079	CAL STD	CAL BLK	5.81882	.005920	01/29/99 08:49:36
Mn	257.610	CAL STD	CAL BLK	.857849	-.001036	01/29/99 08:49:36
Mo	202.030	CAL STD	CAL BLK	.820529	-.005646	01/29/99 08:49:36
Na	330.223	CAL STD	CAL BLK	243.890	-4.03438	01/29/99 08:49:36
Ni	231.604	CAL STD	CAL BLK	.740555	-.000475	01/29/99 08:49:36
P	214.914	CAL STD	CAL BLK	9.56855	.209809	01/29/99 08:49:36
Pb	220.353	CAL STD	CAL BLK	1.63924	-.014855	01/29/99 08:49:36
Sb	206.838	CAL STD	CAL BLK	1.31442	-.000555	01/29/99 08:49:36
Se	196.026	CAL STD	CAL BLK	12.2014	-.000100	01/29/99 08:49:36
SiO2	251.611	CAL STD	CAL BLK	7.03942	-.086307	01/29/99 08:49:36
Sn	189.989	CAL STD	CAL BLK	9.87918	-.014618	01/29/99 08:49:36
Sr	407.771	CAL STD	CAL BLK	.596640	-.000388	01/29/99 08:49:36
Ti	334.941	CAL STD	CAL BLK	1.88609	-.000527	01/29/99 08:49:36
Tl	190.864	CAL STD	CAL BLK	37.1354	-.003216	01/29/99 08:49:36
V	292.402	CAL STD	CAL BLK	1.79482	-.001336	01/29/99 08:49:36
Zn	213.856	CAL STD	CAL BLK	2.32521	-.010585	01/29/99 08:49:36

Method: ICP3Y Sample Name: HIGH STD Operator:
Run Time: 01/29/99 08:53:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98985	9.9653	2.0255	1.0005	.99961	.99478	39.568
SDev	.00261	.0296	.0865	.0071	.00203	.00108	.057
%RSD	.26327	.29739	4.2705	.70941	.20279	.10804	.14335
#1	.98697	9.9450	1.9734	.99368	.99744	.99392	39.504
#2	.99204	9.9515	1.9778	1.0079	.99994	.99445	39.591
#3	.99055	9.9993	H2.1254	1.0001	1.0015	.99599	39.611
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.0500	10.500	2.1000	1.0500	1.0500	1.0500	42.000
Low	.95000	9.5000	1.9000	.95000	.95000	.95000	38.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98970	.99011	.99475	.99635	9.9688	200.41	10.084
SDev	.00345	.00473	.00291	.00135	.0143	1.30	.055
%RSD	.34848	.47803	.29229	.13587	.14359	.64667	.54542
#1	.98631	.99091	.99244	.99508	9.9530	198.93	10.021
#2	.99321	.98503	.99380	.99777	9.9721	200.94	10.110
#3	.98957	.99440	.99801	.99619	9.9811	201.36	10.122
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.0500	1.0500	1.0500	1.0500	10.500	210.00	10.500
Low	.95000	.95000	.95000	.95000	9.5000	190.00	9.5000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	39.783	.99086	1.0066	398.34	.98714	9.9647	.97297
SDev	.083	.00214	.0091	.41	.00490	.0465	.01809
%RSD	.20918	.21616	.90679	.10280	.49670	.46691	1.8590
#1	39.687	.98858	1.0023	397.95	.98441	9.9766	.95209
#2	39.822	.99115	1.0003	398.31	.98422	10.004	.98393
#3	39.839	.99283	1.0170	398.77	.99280	9.9134	.98288
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	42.000	1.0500	1.0500	420.00	1.0500	10.500	1.0500
Low	38.000	.95000	.95000	380.00	.95000	9.5000	.95000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99497	9.9776	211.15	9.9699	.99984	.99702	9.8904
SDev	.00793	.1371	.41	.0400	.00239	.00189	.1247
%RSD	.79726	1.3746	.19224	.40145	.23957	.18993	1.2609
#1	.99072	9.8205	210.71	9.9766	.99727	.99484	9.9247
#2	1.0041	10.073	211.21	10.006	1.0002	.99795	9.7521
#3	.99008	10.039	211.51	9.9270	1.0020	.99828	9.9943
Errors	LC Pass	LC Pass	NOCHECK	LC Pass	LC Pass	LC Pass	LC Pass
High	1.0500	10.500		10.500	1.0500	1.0500	10.500

Low	.95000	9.5000		9.5000	.95000	.95000	9.5000
Elem	V	Zn					
Units	ppm	ppm					
Avge	.99409	.98606					
SDev	.00239	.00388					
%RSD	.24006	.39396					
#1	.99136	.98159					
#2	.99514	.98803					
#3	.99578	.98857					
Errors	LC Pass	LC Pass					
High	1.0500	1.0500					
Low	.95000	.95000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3566	--	--	--	--	--	--
SDev	12.98514	--	--	--	--	--	--
%RSD	.3641278	--	--	--	--	--	--
#1	3551	--	--	--	--	--	--
#2	3572	--	--	--	--	--	--
#3	3575	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICV Operator: WGL
Run Time: 01/29/99 08:56:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50996	4.9664	L.43222	.52400	.50737	.50346	19.588
SDev	.00328	.0320	.05234	.00435	.00174	.00172	.089
%RSD	.64400	.64493	12.110	.83045	.34245	.34164	.45555
#1	.51300	4.9983	L.37222	.52542	.50926	.50508	19.643
#2	.51040	4.9668	.45601	.52746	.50701	.50364	19.635
#3	.50648	4.9342	.46845	.51911	.50584	.50166	19.485
Errors	LC Pass	LC Pass	LC Low	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	.55200	.55200	.55200	.55200	22.100
Low	.44800	4.4800	.44800	.44800	.44800	.44800	17.920

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50878	.50055	.50432	.50934	5.0510	49.598	4.9367
SDev	.00721	.00068	.00339	.00228	.0297	.245	.0080
%RSD	1.4171	.13479	.67163	.44661	.58895	.49463	.16144
#1	.51694	.50122	.50633	.51180	5.0736	49.881	4.9458
#2	.50616	.50057	.50621	.50889	5.0623	49.443	4.9306
#3	.50325	.49987	.50041	.50732	5.0173	49.470	4.9338
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	55.200	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	44.800	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.049	.50211	.51015	199.12	.51181	1.9712	.49948
SDev	.082	.00270	.00094	1.89	.00295	.0878	.00520
%RSD	.40857	.53801	.18364	.95086	.57626	4.4526	1.0419
#1	20.117	.50483	.51020	200.88	.50932	1.9664	.49966
#2	20.071	.50207	.50918	199.37	.51506	2.0613	.50460
#3	19.958	.49943	.51105	197.12	.51104	1.8860	.49419
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.100	.55200	.55200	221.00	.55200	2.2100	.55200
Low	17.920	.44800	.44800	179.20	.44800	1.7920	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49073	4.8956	109.53	5.0043	.50389	.50680	5.0545
SDev	.03493	.0074	.24	.0368	.00061	.00172	.0752
%RSD	7.1303	.15204	.21621	.73537	.12196	.33854	1.4878
#1	.53051	4.8871	109.62	5.0373	.50417	.50753	5.1369
#2	.46471	4.8991	109.71	5.0110	.50431	.50803	5.0368
#3	.47696	4.9007	109.26	4.9646	.50318	.50484	4.9897
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5190	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4810	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50257	.49977
SDev	.00257	.00069
%RSD	.51136	.13751
#1	.50386	.49905
#2	.50424	.49983
#3	.49961	.50042

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3569	--	--	--	--	--	--
SDev	33.95848	--	--	--	--	--	--
%RSD	.9514236	--	--	--	--	--	--
#1	3538	--	--	--	--	--	--
#2	3564	--	--	--	--	--	--
#3	3605	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICB Operator: WGL
Run Time: 01/29/99 09:00:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00027	-.00088	-.04894	-.00428	.00000	.00013	-.00612
SDev	.00080	.00971	.04936	.00138	.00021	.00011	.00089
%RSD	297.19	1107.6	100.86	32.294	250680.	78.770	14.566
#1	.00038	.01012	.00110	-.00349	.00025	.00026	-.00513
#2	-.00116	-.00826	-.09760	-.00587	-.00012	.00006	-.00636
#3	-.00002	-.00449	-.05033	-.00347	-.00012	.00009	-.00687
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00027	.00067	.00032	.00056	.00321	-.14200	.00176
SDev	.00123	.00126	.00230	.00001	.00003	.14986	.00051
%RSD	460.12	187.46	724.10	2.4003	.83860	105.53	28.937
#1	-.00114	-.00067	.00249	.00056	.00321	-.30433	.00147
#2	.00113	.00184	.00055	.00058	.00324	-.11276	.00235
#3	.00081	.00085	-.00209	.00055	.00318	-.00893	.00147
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00502	.00008	.00604	-.04343	-.00171	-.00422	-.00215
SDev	.01388	.00014	.00033	.62058	.00301	.05706	.01080
%RSD	276.56	187.11	5.5292	1429.0	175.94	1353.6	502.88
#1	.01086	.00016	.00643	.29930	.00118	.05602	-.00576
#2	-.01108	.00016	.00583	-.75979	-.00482	-.05745	-.01068
#3	-.01483	-.00009	.00588	.33021	-.00149	-.01122	.01000
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00718	.00202	.09147	.01277	-.00000	-.00035	.00000
SDev	.00728	.02739	.03692	.01171	.00010	.00109	.07271
%RSD	101.38	1358.1	40.361	91.637	4983.1	311.58	5120200.
#1	.01552	.00668	.13251	.00738	.00011	.00052	.06898
#2	.00386	-.02740	.08095	.00474	-.00005	.00000	-.07594
#3	.00215	.02677	.06095	.02620	-.00006	-.00157	.00696
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	.00011	-.00047					
SDev	.00115	.00093					
%RSD	1084.4	197.15					
#1	.00079	.00038					
#2	-.00122	-.00147					
#3	.00075	-.00034					
Errors	LC Pass	LC Pass					
High	.01000	.02000					
Low	-.01000	-.02000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3603	--	--	--	--	--	--
SDev	27.73126	--	--	--	--	--	--
%RSD	.7696571	--	--	--	--	--	--
#1	3602	--	--	--	--	--	--
#2	3576	--	--	--	--	--	--
#3	3631	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CRI Operator: WGL
Run Time: 01/29/99 09:03:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01950	-.00266	-.00486	-.00059	-.00012	.01029	-.00357
SDev	.00039	.00774	.01593	.00293	.00000	.00004	.00225
%RSD	2.0018	290.90	327.65	491.96	1.3613	.38131	63.030
#1	.01995	.00517	.01043	.00211	-.00012	.01025	-.00506
#2	.01926	-.00284	-.00366	-.00370	-.00012	.01029	-.00098
#3	.01928	-.01030	-.02136	-.00020	-.00012	.01033	-.00465
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	NOCHECK
High	.03000					.01500	
Low	.01000					.00500	

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00905	.10073	.02028	.05177	.00208	-.19767	.00175
SDev	.00210	.00067	.00028	.00051	.00184	.15208	.00132
%RSD	23.141	.65992	1.3859	.98779	88.212	76.938	75.362
#1	.00766	.10138	.02057	.05138	-.00004	-.37204	.00059
#2	.01146	.10076	.02001	.05159	.00317	-.12847	.00147
#3	.00804	.10006	.02026	.05235	.00312	-.09249	.00318
Errors	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK
High	.01500	.15000	.03000	.07500			
Low	.00500	.05000	.01000	.02500			

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00483	.03054	-.00068	-.11867	.08230	.02861	-.01409
SDev	.00133	.00051	.00156	.39261	.00331	.03629	.01205
%RSD	27.464	1.6709	230.42	330.84	4.0158	126.83	85.568
#1	-.00511	.03048	.00047	-.55615	.07911	.01255	-.02747
#2	-.00600	.03108	-.00246	.20305	.08209	.07016	-.01071
#3	-.00339	.03006	-.00005	-.00292	.08571	.00312	-.00408
Errors	NOCHECK	LC Pass	NOCHECK	NOCHECK	LC Pass	NOCHECK	NOCHECK
High		.04500			.12000		
Low		.01500			.04000		

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.10364	-.03858	.03103	-.01870	.00005	-.00036	.05025
SDev	.00709	.03044	.01632	.01344	.00018	.00030	.03020
%RSD	6.8406	78.901	52.584	71.886	381.31	84.273	60.097
#1	.10547	-.06775	.04622	-.02513	-.00006	-.00053	.01981
#2	.10964	-.04096	.03310	-.00325	-.00006	-.00001	.05074
#3	.09582	-.00702	.01378	-.02771	.00026	-.00053	.08020
Errors	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
High	.18000						

Low	.06000	
Elem	V	Zn
Units	ppm	ppm
Avge	.09981	.03945
SDev	.00088	.00182
%RSD	.88603	4.6156
#1	.10082	.04155
#2	.09917	.03852
#3	.09945	.03829
Errors	LC Pass	LC Pass
High	.15000	.06000
Low	.05000	.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3633	--	--	--	--	--	--
SDev	32.95845	--	--	--	--	--	--
%RSD	.9070873	--	--	--	--	--	--
#1	3622	--	--	--	--	--	--
#2	3608	--	--	--	--	--	--
#3	3671	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSA Operator: WGL
Run Time: 01/29/99 09:07:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00130	479.96	H.11178	.02078	.00225	.00046	453.19
SDev	.00287	1.94	.10536	.00632	.00031	.00018	1.32
%RSD	220.13	.40322	94.250	30.436	13.674	39.467	.29213
#1	-.00088	480.20	.08030	.01646	.00207	.00045	453.77
#2	-.00436	481.76	H.22929	.02803	.00208	.00028	451.67
#3	.00133	477.91	.02576	.01784	.00261	.00064	454.12
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass
High	.02000	600.00	.10000	.10000	.02000	.00400	600.00
Low	-.02000	400.00	-.10000	-.10000	-.02000	-.00400	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00587	.00574	.00512	-.00038	175.59	-.06061	.00233
SDev	.00263	.00549	.00274	.00180	.08	.58156	.00173
%RSD	44.790	95.644	53.518	471.82	.04324	959.44	74.156
#1	-.00889	-.00051	.00503	.00014	175.68	-.03650	.00233
#2	-.00411	.00793	.00243	-.00239	175.56	-.65385	.00060
#3	-.00460	.00981	.00790	.00110	175.53	.50851	.00405
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.02000	.02000	.02000	240.00	5.0000	.05000
Low	-.01000	-.02000	-.02000	-.02000	160.00	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	508.02	.00082	.00316	-.98190	.00215	.01056	-.02754
SDev	1.35	.00038	.00515	1.04668	.00330	.05533	.04688
%RSD	.26550	46.418	163.24	106.60	153.65	524.08	170.19
#1	507.99	.00091	.00812	-.50561	.00578	-.04715	-.04984
#2	509.38	.00040	-.00217	-2.1820	.00132	.01566	L-.05911
#3	506.68	.00115	.00353	-.25807	-.00066	.06316	.02632
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.00	.02000	.02000	5.0000	.04000	.30000	.05000
Low	400.00	-.02000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01426	.04891	.02244	.01881	.01898	.00272	.05917
SDev	.03117	.04723	.00677	.03002	.00026	.00031	.09893
%RSD	218.52	96.546	30.174	159.64	1.3514	11.533	167.21
#1	-.01621	.05537	.02968	.04696	.01912	.00288	.02987
#2	.01292	.09258	.01627	-.01279	.01913	.00293	-.02181
#3	.04608	-.00121	.02136	.02225	.01868	.00236	.16944
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.15000	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00295	-.00369
SDev	.00253	.00169
%RSD	85.756	45.736
#1	.00340	-.00386
#2	.00023	-.00192
#3	.00523	-.00529

Errors	LC Pass	LC Pass
High	.02000	.02000
Low	-.02000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3646	--	--	--	--	--	--
SDev	12.81159	--	--	--	--	--	--
%RSD	.3513960	--	--	--	--	--	--
#1	3639	--	--	--	--	--	--
#2	3638	--	--	--	--	--	--
#3	3661	--	--	--	--	--	--

Method: ICP3Y Sample Name: ICSAB Operator: WGL
Run Time: 01/29/99 09:10:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.95751	439.00	1.8351	2.0076	.47817	.48925	425.94
SDev	.00856	.28	.1565	.0048	.00080	.00083	2.79
%RSD	.89414	.06294	8.5281	.23946	.16781	.16986	.65553
#1	.96627	438.71	2.0048	2.0046	.47843	.49017	428.17
#2	.94916	439.03	1.8042	2.0050	.47880	.48855	422.81
#3	.95711	439.26	1.6964	2.0131	.47726	.48904	426.84
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	600.00	2.4000	2.4000	.60000	.60000	600.00
Low	.80000	400.00	1.5900	1.5900	.40000	.40000	400.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94290	.45388	.47031	.48549	163.85	48.665	.97718
SDev	.01093	.01077	.00770	.00301	.63	.519	.00856
%RSD	1.1595	2.3723	1.6375	.61955	.38154	1.0661	.87649
#1	.94360	.46564	.47769	.48838	164.27	49.253	.97625
#2	.93163	.44451	.46232	.48237	163.13	48.271	.98618
#3	.95346	.45149	.47091	.48571	164.16	48.471	.96912
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	.60000	.60000	.60000	240.00	60.000	1.2000
Low	.80000	.40000	.40000	.40000	160.00	40.000	.80000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	465.77	.46287	.89853	48.007	.92179	1.8076	.94311
SDev	.54	.00280	.00554	1.811	.00808	.3221	.05149
%RSD	.11528	.60561	.61655	3.7723	.87704	17.821	5.4600
#1	466.01	.46432	.90036	49.863	.92997	2.0833	1.0008
#2	465.15	.45964	.89231	46.245	.91380	1.8859	.90188
#3	466.14	.46465	.90292	47.914	.92160	1.4535	.92661
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK	LC Pass
High	600.00	.60000	1.2000	60.000	1.2000		1.2000
Low	400.00	.40000	.80000	40.000	.80000		.80000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.88966	4.7500	20.380	9.1504	.94578	.93598	9.4546
SDev	.05745	.1728	.147	.3369	.00108	.00112	.1332
%RSD	6.4575	3.6386	.72079	3.6816	.11466	.11948	1.4089
#1	.82333	4.7883	20.517	9.5320	.94453	.93689	9.4034
#2	.92224	4.9005	20.225	9.0246	.94650	.93473	9.6058
#3	.92342	4.5612	20.398	8.8945	.94630	.93632	9.3546
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1.2000	6.0000	25.680	12.000	1.2000	1.2000	12.000

Low	.80000	4.0000	17.120	8.0000	.80000	.80000	8.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.46820	.92936
SDev	.00482	.00863
%RSD	1.0294	.92857
#1	.47366	.93552
#2	.46453	.91950
#3	.46640	.93306

Errors	LC Pass	LC Pass
High	.60000	1.2000
Low	.40000	.80000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3695	--	--	--	--	--	--
SDev	23.43567	--	--	--	--	--	--
%RSD	.6342150	--	--	--	--	--	--
#1	3688	--	--	--	--	--	--
#2	3721 ✓	--	--	--	--	--	--
#3	3676	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCV1 Operator: WGL
Run Time: 01/29/99 09:14:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49863	4.9026	1.0098	.50249	.49495	.50724	19.939
SDev	.00194	.0234	.0290	.00560	.00042	.00029	.093
%RSD	.38969	.47733	2.8720	1.1138	.08510	.05802	.46601
#1	.49988	4.9010	1.0368	.49732	.49538	.50713	19.917
#2	.49639	4.9268	1.0132	.50844	.49493	.50702	19.859
#3	.49962	4.8801	.97916	.50172	.49453	.50757	20.041
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49351	.50152	.50128	.49716	5.0327	98.749	4.9413
SDev	.00464	.00304	.00217	.00029	.0113	.574	.0381
%RSD	.93929	.60603	.43248	.05846	.22393	.58173	.77010
#1	.49590	.50041	.50361	.49687	5.0326	98.688	4.9143
#2	.48817	.49919	.49933	.49745	5.0214	99.352	4.9848
#3	.49647	.50496	.50090	.49715	5.0440	98.208	4.9248
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb NR
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	19.822	.49870	.50185	198.12	.51072	4.9398	.48328
SDev	.051	.00121	.00889	.58	.00134	.0753	.02721
%RSD	.25667	.24352	1.7721	.29186	.26325	1.5253	5.6303
#1	19.772	.49886	.49880	198.07	.50924	4.9646	.45697
#2	19.822	.49742	.49488	198.72	.51185	4.8551	.48156
#3	19.874	.49983	.51186	197.57	.51108	4.9996	.51131
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.48675	4.9550	105.21	4.9709	.49947	.49632	5.0470
SDev	.02181	.0055	.26	.0738	.00060	.00037	.1385
%RSD	4.4813	.11030	.25113	1.4848	.12035	.07486	2.7449
#1	.49058	4.9520	105.11	5.0542	.49888	.49606	5.2055
#2	.48328	4.9613	105.01	4.9137	.50008	.49615	4.9492
#3	.50639	4.9516	105.51	4.9447	.49945	.49675	4.9863
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	117.70	5.5200	.55200	.55200	5.5200

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.49636	.49498
SDev	.00268	.00276
%RSD	.54046	.55734
#1	.49844	.49522
#2	.49333	.49211
#3	.49731	.49762

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3638	--	--	--	--	--	--
SDev	23.56828	--	--	--	--	--	--
%RSD	.6478131	--	--	--	--	--	--
#1	3620	--	--	--	--	--	--
#2	3665	--	--	--	--	--	--
#3	3630	--	--	--	--	--	--

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Method: ICP3Y Sample Name: CCB1 Operator: WGL
Run Time: 01/29/99 09:17:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00056	.00592	-.03636	-.00199	.00013	.00021	.00354
SDev	.00080	.01192	.01689	.00343	.00029	.00031	.00163
%RSD	143.85	201.36	46.455	172.75	230.57	150.17	46.130
#1	-.00034	.01694	-.05562	-.00001	.00044	.00057	.00490
#2	.00080	-.00674	-.02939	-.00000	.00006	.00003	.00399
#3	.00121	.00756	-.02406	-.00595	-.00013	.00003	.00173
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00070	.00184	-.00073	.00032	.00330	-.11479	.00057
SDev	.00114	.00136	.00177	.00051	.00332	.22374	.00089
%RSD	161.67	73.749	243.54	160.55	100.57	194.92	155.82
#1	.00130	.00287	-.00004	.00063	.00665	-.37257	.00147
#2	-.00061	.00235	-.00274	-.00027	.00326	-.00070	.00058
#3	.00142	.00030	.00060	.00060	.00000	.02891	-.00032
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00045	.00026	.00118	.56531	-.00078	-.02088	.00293
SDev	.00366	.00013	.00353	.71703	.00189	.03816	.01416
%RSD	811.89	50.044	299.66	126.84	243.59	182.80	483.67
#1	.00423	.00019	-.00188	1.3542	-.00199	.01797	-.01342
#2	-.00309	.00041	.00037	-.04688	-.00174	-.02229	.01106
#3	.00022	.00018	.00505	.38865	.00140	-.05831	.01115
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.01651	-.02529	.03103	-.02411	.00018	-.00017	.00394
SDev	.00538	.04000	.01290	.01782	.00010	.00031	.02431
%RSD	32.584	158.18	41.561	73.898	54.782	184.85	617.46
#1	-.02224	.02090	.04299	-.03455	.00013	.00001	.01812
#2	-.01572	-.04825	.03274	-.00354	.00012	-.00053	-.02413
#3	-.01157	-.04851	.01737	-.03426	.00029	.00001	.01782
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000
Elem	V	Zn					
Units	ppm	ppm					
Avge	.00107	-.00023					
SDev	.00111	.00104					
%RSD	104.39	449.45					
#1	.00172	.00009					
#2	.00170	-.00140					
#3	-.00022	.00061					
Errors	LC Pass	LC Pass					
High	.01000	.02000					
Low	-.01000	-.02000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3521	--	--	--	--	--	--
SDev	32.17669	--	--	--	--	--	--
%RSD	.9139653	--	--	--	--	--	--
#1	3485	--	--	--	--	--	--
#2	3548	--	--	--	--	--	--
#3	3529	--	--	--	--	--	--

Analysis Report Fri 01-29-99 09:30:19 AM page 1

Method: ICP3Y Sample Name: CPXAH Operator: WGL
Run Time: 01/29/99 09:27:08
Comment: 9019172 RERUN
Mode: CONC Corr. Factor: 500

All Results 01-25-99

~~Zn Only From This Run~~

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.5015	25823.	68.303	137.44	425.96	.61516	45326.
SDev	1.0057	30.	3.795	2.36	1.23	.05173	30.
%RSD	10.585	.11511	5.5555	1.7186	.28868	8.4093	.06670
#1	10.517	25853.	71.553	134.83	427.38	.67489	45293.
#2	8.5063	25823.	69.224	138.06	425.20	.58453	45353.
#3	9.4807	25794.	64.133	139.43	425.30	.58607	45333.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	500000.	50000.	50000.	50000.	25000.	500000.
Low	-5.0000	-50.000	-50.000	-50.000	-5.0000	-1.0000	-100.00

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	412.62	22.531	67.572	279.91	11758.	38013.	38.496
SDev	2.73	1.373	1.308	1.72	8.	204.	.282
%RSD	.66191	6.0932	1.9355	.61342	.06840	.53753	.73205
#1	414.47	23.630	69.067	281.62	11767.	38233.	38.759
#2	409.49	20.992	67.015	278.18	11756.	37830.	38.198
#3	413.92	22.969	66.636	279.94	11751.	37976.	38.531
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	50000.	50000.	250000.	250000.	25000.
Low	-2.5000	-5.0000	-5.0000	-10.000	-50.000	-2500.0	-25.000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5850.7	419.60	21.532	43988.	25.391	4298.4	4155.6
SDev	25.5	.52	2.628	407.	2.196	19.8	12.8
%RSD	.43646	.12470	12.206	.92526	8.6467	.46060	.30854
#1	5879.6	419.29	23.761	44434.	27.861	4283.1	4168.1
#2	5831.1	419.31	18.634	43894.	23.663	4291.4	4142.5
#3	5841.6	420.21	22.201	43636.	24.649	4320.8	4156.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	50000.	50000.	1000000.	50000.	100000.	50000.
Low	-100.00	-5.0000	-10.000	-2500.0	-20.000	-150.00	-25.000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	196.75	8.4153	1443.5	326.50	151.44	2419.2	-17.598
SDev	9.66	9.2755	9.6	28.49	.65	5.4	19.259
%RSD	4.9114	110.22	.66288	8.7257	.43109	.22233	109.44
#1	185.88	18.936	1454.2	334.08	152.17	2425.3	-12.270
#2	199.99	1.4154	1435.9	294.98	151.22	2416.8	-38.961
#3	204.37	4.8948	1440.3	350.43	150.92	2415.4	-1.5643
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	50000.	107000.	50000.	25000.	50000.	50000.

Low	-30.000	-100.00	-250.00	-50.000	-25.000	-7.5000	-1000.0
Elem	V	Zn					
Units	ppm	ppm					
Avge	28.625	19373.					
SDev	.709	24.					
%RSD	2.4775	.12600					
#1	29.444	19353.					
#2	28.226	19400.					
#3	28.204	19366.					
Errors	LC Pass	LC Pass					
High	50000.	50000.					
Low	-5.0000	-10.000					
IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3494	--	--	--	--	--	--
SDev	10.47540	--	--	--	--	--	--
%RSD	.2998518	--	--	--	--	--	--
#1	3483	--	--	--	--	--	--
#2	3493	--	--	--	--	--	--
#3	3504	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCV2 Operator: WGL
Run Time: 01/29/99 10:02:35
Comment: 9027151
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51167	5.0045	1.0262	.50568	.49589	.52562	20.989
SDev	.00354	.0282	.0066	.00399	.00313	.00333	.196
%RSD	.69248	.56303	.64395	.78959	.63010	.63351	.93183
#1	.51044	5.0134	1.0209	.50463	.49751	.52665	20.876
#2	.51566	5.0271	1.0336	.51009	.49786	.52830	21.215
#3	.50890	4.9729	1.0241	.50232	.49229	.52189	20.875
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	5.5200	1.1000	.55200	.55200	.55200	22.000
Low	.44800	4.4800	.90000	.44800	.44800	.44800	18.000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52249	.51970	.52332	.50016	5.1752	98.860	4.8513
SDev	.00413	.00688	.00549	.00230	.0314	.893	.0415
%RSD	.79046	1.3233	1.0482	.46056	.60615	.90300	.85491
#1	.51868	.51771	.52076	.50053	5.1632	99.075	4.8865
#2	.52688	.52735	.52962	.50225	5.2108	99.625	4.8619
#3	.52192	.51403	.51959	.49769	5.1517	97.879	4.8056
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.55200	.55200	.55200	.55200	5.5200	110.50	5.5200
Low	.44800	.44800	.44800	.44800	4.4800	89.511	4.4800

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	20.100	.51653	.51478	199.34	.52311	5.1876	.50567
SDev	.135	.00377	.00569	1.03	.00830	.0784	.02176
%RSD	.67213	.72903	1.1054	.51559	1.5874	1.5117	4.3038
#1	20.103	.51536	.51116	199.73	.53102	5.1587	.49074
#2	20.234	.52074	.52134	200.13	.52385	5.2764	.53064
#3	19.964	.51349	.51184	198.18	.51446	5.1278	.49562
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	22.000	.55200	.55200	220.00	.55200	5.5200	.55200
Low	17.920	.44800	.44800	180.00	.44800	4.4800	.44800

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.48069	5.0860	109.29	5.2715	.50224	.50975	5.2785
SDev	.01779	.0735	.85	.0396	.00333	.00293	.0972
%RSD	3.7011	1.4452	.78172	.75128	.66323	.57497	1.8414
#1	.47499	5.0209	109.09	5.2278	.50440	.50998	5.2338
#2	.46645	5.1657	110.23	5.2816	.50393	.51257	5.3900
#3	.50063	5.0714	108.56	5.3051	.49841	.50672	5.2116
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass

Low	.44800	4.4800	96.300	4.4800	.44800	.44800	4.4800

Elem	V	Zn
Units	ppm	ppm
Avge	.50918	.51770
SDev	.00462	.00574
%RSD	.90644	1.1090
#1	.50823	.52010
#2	.51420	.52185
#3	.50512	.51115

Errors	LC Pass	LC Pass
High	.55200	.55200
Low	.44800	.44800

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3535	--	--	--	--	--	--
SDev	34.10052	--	--	--	--	--	--
%RSD	.9646389	--	--	--	--	--	--
#1	3551	--	--	--	--	--	--
#2	3496 √	--	--	--	--	--	--
#3	3559	--	--	--	--	--	--

Method: ICP3Y Sample Name: CCB2 Operator: WGL
Run Time: 01/29/99 10:06:06
Comment: 9027151
Mode: CONC Corr. Factor: 1

Elem	Ag	Al	As	B	Ba	Be	Ca
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00050	.00457	-.03965	-.00394	.00012	.00004	.01040
SDev	.00082	.00572	.00892	.00447	.00028	.00001	.00153
%RSD	163.06	125.20	22.509	113.64	231.35	19.654	14.713
#1	.00041	.01116	-.04401	-.00711	-.00013	.00003	.00865
#2	-.00116	.00089	-.04555	-.00588	.00043	.00005	.01109
#3	-.00076	.00166	-.02938	.00118	.00006	.00004	.01147
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.01000	.10000	.10000	.10000	.01000	.00200	.20000
Low	-.01000	-.10000	-.10000	-.10000	-.01000	-.00200	-.20000

Elem	Cd	Co	Cr	Cu	Fe	K	Li
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00078	.00083	-.00064	.00116	.00434	-.01579	.00176
SDev	.00127	.00088	.00182	.00050	.00189	.19134	.00051
%RSD	163.25	106.16	282.96	43.412	43.554	1211.7	28.973
#1	.00016	.00133	.00058	.00146	.00653	-.23461	.00147
#2	-.00222	.00134	.00023	.00058	.00324	.12011	.00235
#3	-.00027	-.00019	-.00274	.00145	.00326	.06713	.00147
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.00500	.01000	.01000	.02000	.10000	5.0000	.05000
Low	-.00500	-.01000	-.01000	-.02000	-.10000	-5.0000	-.05000

Elem	Mg	Mn	Mo	Na	Ni	P	Pb
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00553	.00001	.00035	.39853	-.00237	-.02713	-.01501
SDev	.00147	.00014	.00258	.09221	.00281	.02350	.01871
%RSD	26.608	1578.3	746.27	23.137	118.28	86.625	124.69
#1	-.00723	.00017	-.00125	.50444	-.00152	-.04842	.00088
#2	-.00463	-.00007	.00332	.33612	-.00009	-.03105	-.01026
#3	-.00473	-.00007	-.00103	.35503	-.00550	-.00191	-.03563
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.20000	.01000	.02000	5.0000	.04000	.30000	.05000
Low	-.20000	-.01000	-.02000	-5.0000	-.04000	-.30000	-.05000

Elem	Sb	Se	SiO2	Sn	Sr	Ti	Tl
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.02123	-.00467	.17361	-.02400	.00011	-.00053	-.01017
SDev	.01637	.00395	.04400	.03904	.00000	.00053	.01596
%RSD	77.139	84.654	25.344	162.69	1.5422	100.74	156.88
#1	-.00241	-.00011	.21747	-.06478	.00012	-.00053	.00724
#2	-.02901	-.00694	.17390	-.02026	.00011	-.00106	-.01365
#3	-.03225	-.00696	.12947	.01304	.00012	.00000	-.02412
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.06000	.20000	.50000	.10000	.05000	.01500	2.0000

Low	-.06000	-.20000	-.50000	-.10000	-.05000	-.01500	-2.0000

Elem	V	Zn
Units	ppm	ppm
Avge	.00035	.00053
SDev	.00061	.00067
%RSD	174.51	125.15
#1	.00067	.00122
#2	.00074	.00048
#3	-.00035	-.00011

Errors	LC Pass	LC Pass
High	.01000	.02000
Low	-.01000	-.02000

IntStd	1	2	3	4	5	6	7
Mode	Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	3557	--	--	--	--	--	--
SDev	12.52629	--	--	--	--	--	--
%RSD	.3521148	--	--	--	--	--	--
#1	3546	--	--	--	--	--	--
#2	3571 √	--	--	--	--	--	--
#3	3556	--	--	--	--	--	--

ICPMS Standard and Spike True Values

Element	Calibration Standard	Initial Calibration Verification	Continuing Calibration Verification	Interference Check Sample A	Interference Check Sample AB	Duplicate Control Sample	Matrix Spike	Matrix Spike Duplicate	Post Digestion Spike
Antimony	100	200	100	100000 Aluminum	Solution A with required	100	100	100	100
Arsenic	100	200	100	100000 Calcium	elements spiked at 100 ug/L	100	100	100	100
Barium	100	200	100	100000 Iron		100	100	100	100
Berylium	100	200	100	100000 Magnesium		100	100	100	100
Cadmium	100	200	100	100000 Sodium		100	100	100	100
Chromium	100	200	100	100000 Phosphorous		100	100	100	100
Cobalt	100	200	100	100000 Potassium		100	100	100	100
Copper	100	200	100	100000 Sulfur		100	100	100	100
Lead	100	200	100	200000 Carbon		100	100	100	100
Manganese	100	200	100	1000000 Chloride		100	100	100	100
Iron	5000	5000	5000	2000 Molybdenum		5000	5000	5000	5000
Molybdenum	100	400	100	2000 Titanium		100	100	100	100
Nickel	100	200	100			100	100	100	100
Selenium	100	200	100			100	100	100	100
Silver	100	200	100			100	100	100	100
Tin	100	200	100			100	100	100	100
Thallium	100	200	100			100	100	100	100
Uranium	100	200	100			100	100	100	100
Vanadium	100	200	100			100	100	100	100
Zinc	100	200	100			100	100	100	100

All units are in ug/L

Elan 6000 ICPMS IDL

Forth Quarter 1998

Analyte	11/17/98 SD	11/25/98 SD	12/11/98 SD	IDL	RL
Be	0.003173	0.005926	0.004861	**0.0140**	1
Al	0.037362	0.048848	0.076229	**0.1624**	50
V	0.010648	0.007003	0.011311	**0.0290**	5
Cr	0.019041	0.019143	0.021804	**0.0600**	1
Mn	0.005322	0.003507	0.003494	**0.0123**	1
Fe	1.357894	0.428796	1.21785	**3.0045**	50
Co	0.000872	0.000962	0.000621	**0.0025**	1
Ni	0.016641	0.009053	0.041204	**0.0669**	1
Cu	0.048306	0.020626	0.083967	**0.1529**	1
Zn	0.051766	0.051956	0.102599	**0.2063**	10
As	0.023543	0.03635	0.021912	**0.0818**	5
Se	0.063753	0.123541	0.072927	**0.2602**	5
Mo	0.005083	0.009488	0.002699	**0.0173**	1
Ag	0.005401	0.003904	0.00197	**0.0113**	1
Cd	0.003195	0.003322	0.001799	**0.0083**	1
Sn	0.061825	0.036971	0.020043	**0.1188**	10
Sb	0.080931	0.057883	0.031712	**0.1705**	1
Ba	0.0041	0.004183	0.004369	**0.0127**	1
Tl	0.001465	0.001523	0.000983	**0.0040**	1
Pb	0.004466	0.024925	0.006233	**0.0356**	1
U	0.00076	0.00045	0.000712	**0.0019**	1

Units are ug/L

ICPMS Standards and Spiking Solutions

Method 6020

Calibration Standards

Inorganic Ventures Cal - 1 Verification # 11691
Expires 8/99 250uL to 50mL

Inorganic Ventures Cal - 2 Verification # 11513
Expires 8/99 250uL to 50mL

Initial Calibration Verification

Spex Instrument Check Standard 1 Verification # 11505
Expires 3/99 200uL to 10mL

Spex Instrument Check Standard 4 Verification # 11506
Expires 3/99 200uL to 10mL

Spex Instrument Check Standard 5 Verification # 11507
Expires 3/99 200uL to 10mL

Quality Control Standards

QC Std. 1 = Initial Calibration Verification (ICV)

QC Std. 2 = Initial Calibration Blank (ICB)

QC Std. 3 = Continuing Calibration Verification (CCV)

QC Std. 4 = Continuing Calibration Blank (CCB)

QC Std 5 = Continuing Calibration Blank (Final)

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 1/27/99
Time: 10:15:28

BATCH NUMBER: 9019177

PREP DATE: 1/27/99
DUE DATE 2/01/99

INITIALS: ARC/JJ ARC 1/27/99

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190	CPXA1	01	X .52 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
D9A130190	CPXA3	01	X .97 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
	CPXA3S		1.00 g	____ g	____ g	____ g
	CPXA3X		.98 g	____ g	____ g	____ g
D9A130190	CPXA5	01	X 1.02 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
D9A130190	CPXA6	01	X 1.00 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXA7	01	X .51 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
D9A130190	CPXA8	01	X 1.02 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
D9A130190	CPXA9	01	X .98 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
D9A130190	CPXAA	01	X .99 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAC	01	X .54 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAD	01	X .48 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAE	01	X .48 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAF	01	X .47 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAG	01	X .51 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			
* D9A130190	CPXAH	01	X .52 g	____ g	____ g	____ g
SOLID	TO DUE DATE:		2/01/99			

RQC057 Quanterra Incorporated Run Date: 1/27/99
METALS PREP LOG/BATCH SUMMARY Time: 10:15:28

BATCH NUMBER: 9019177 PREP DATE: 1/27/99
DUE DATE 2/01/99 INITIALS: ALG

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT	GFA/WEIGHT	FLA/WEIGH
* D9A130190	CPXAJ	01	X .48 g	_____g	_____g	_____g
SOLID	TO DUE DATE:		2/01/99			
D9A190000	CQ2HMB	01	X 1.00 g	_____g	_____g	_____g
SOLID	DUE DATE:		0/00/00			
	CQ2HMC		1.00 g	_____g	_____g	_____g
	CQ2HML		1.00 g	_____g	_____g	_____g

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH ✓
MS/MSD AND PDS ON BATCH ✓
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED ✓
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG ✓

COMMENTS: * Limited Sample - Final Vol. Brought to 50g - All others brought to 100g
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

AG AS BA CO CR MN NI PB SB SE TL VX

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	___	___

Instrument Upload Run Log - Page 1

Started Thu Feb 4 16:24:36 1999 by ROBERTSD

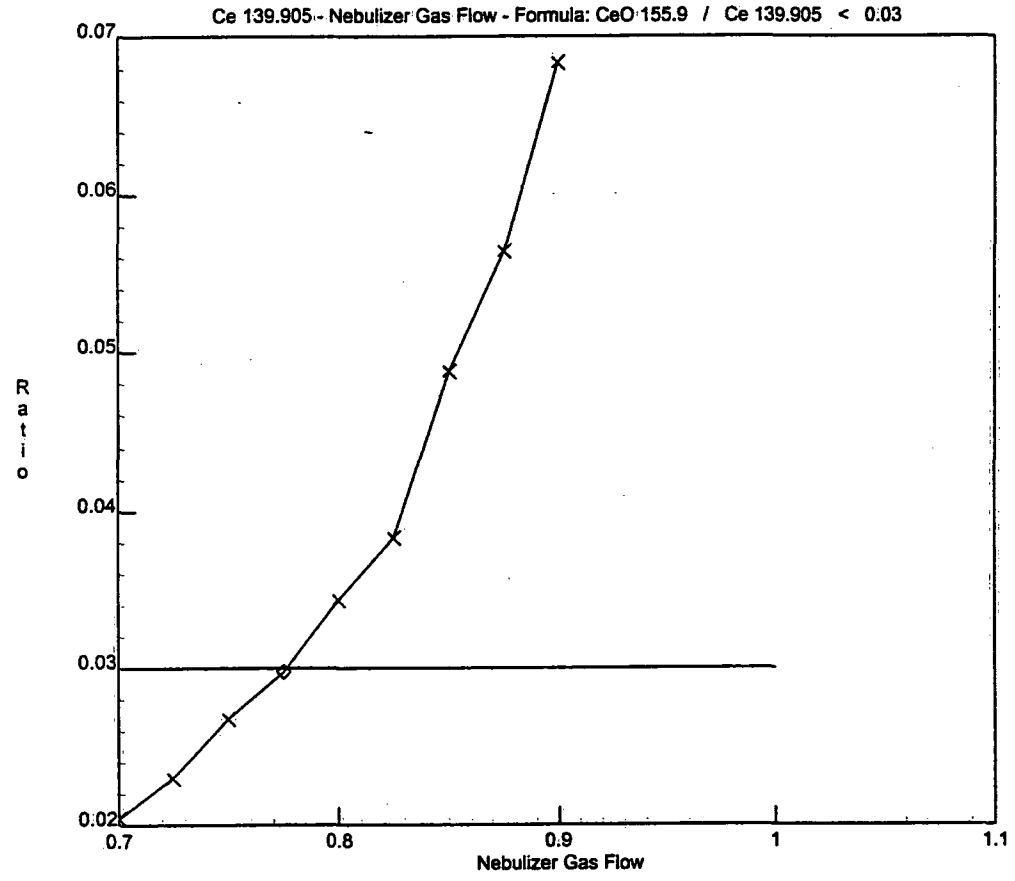
Data File: UPL$DEN_DATA_ROOT:<REP>020499.REP;1

#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
1	BLANK		04-FEB-1999	08:37			004
2	STANDARD 1		04-FEB-1999	08:42:22			004
3	QC STD 1		04-FEB-1999	08:47:02			004
4	QC STD 2		04-FEB-1999	08:51:41			004
5	ICSA		04-FEB-1999	08:57:40			004
6	ICSA		04-FEB-1999	09:03:10			004
7	BLANK		04-FEB-1999	09:07:38			004
8	QC STD 3		04-FEB-1999	09:12:21			004
9	QC STD 5		04-FEB-1999	09:17:06			004
10	CQ2HMB		04-FEB-1999	09:30:24	9019177	D9A190000	004
11	CQ2HMC		04-FEB-1999	09:34:49	9019177	D9A190000	004
12	CQ2HML		04-FEB-1999	09:39:14	9019177	D9A190000	004
13	CPXA1		04-FEB-1999	09:43:39	9019177	D9A130190	004
14	CPXA3		04-FEB-1999	09:48:05	9019177	D9A130190	004
15	CPXA3	L	04-FEB-1999	09:52:31			004
16	CPXA3	PDS	04-FEB-1999	09:56:58			004
17	CPXA3S		04-FEB-1999	10:01:25	9019177	D9A130190	004
18	CPXA3X		04-FEB-1999	10:05:52	9019177	D9A130190	004
19	QC STD 3		04-FEB-1999	10:10:37			004
20	QC STD 4		04-FEB-1999	10:15:20			004
21	QC STD 4		04-FEB-1999	10:20:52			004
22	CPXA5		04-FEB-1999	10:25:20	9019177	D9A130190	004
23	CPXA6		04-FEB-1999	10:29:49	9019177	D9A130190	004
24	CPXA7		04-FEB-1999	10:34:18	9019177	D9A130190	004
25	CPXA8		04-FEB-1999	10:38:47	9019177	D9A130190	004
26	CPXA9		04-FEB-1999	10:43:18	9019177	D9A130190	004
27	CPXAA		04-FEB-1999	10:47:48	9019177	D9A130190	004
28	CPXAC		04-FEB-1999	10:52:19	9019177	D9A130190	004
29	CPXAD		04-FEB-1999	10:56:47	9019177	D9A130190	004
30	QC STD 3		04-FEB-1999	11:01:30			004
31	QC STD 4		04-FEB-1999	11:07:02			004
32	CPXAE		04-FEB-1999	11:11:35	9019177	D9A130190	004
33	CPXAF		04-FEB-1999	11:15:59	9019177	D9A130190	004
34	CPXAG		04-FEB-1999	11:20:25	9019177	D9A130190	004
35	CPXAH		04-FEB-1999	11:24:50	9019177	D9A130190	004
36	CPXAJ		04-FEB-1999	11:29:16	9019177	D9A130190	004
37	QC STD 3		04-FEB-1999	11:33:59			004
38	QC STD 4		04-FEB-1999	11:39:32			004
39	QC STD 4		04-FEB-1999	11:44:13			004
40	BLANK		04-FEB-1999	11:54:50			004
41	STANDARD 1		04-FEB-1999	11:59:19			004
42	QC STD 3		04-FEB-1999	12:04:02			004
43	QC STD 4		04-FEB-1999	12:11:12			004
44	CPXA1	5	04-FEB-1999	12:21:13	9019177	D9A130190	004

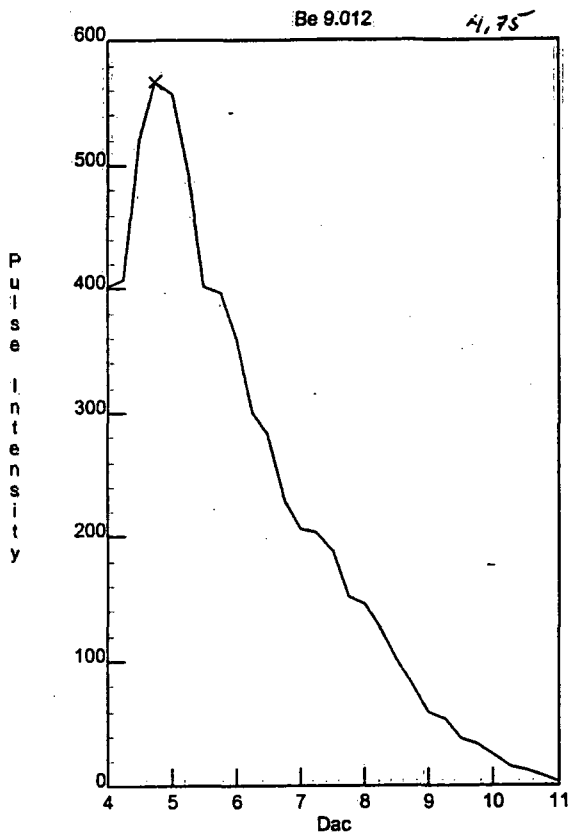
(continued)

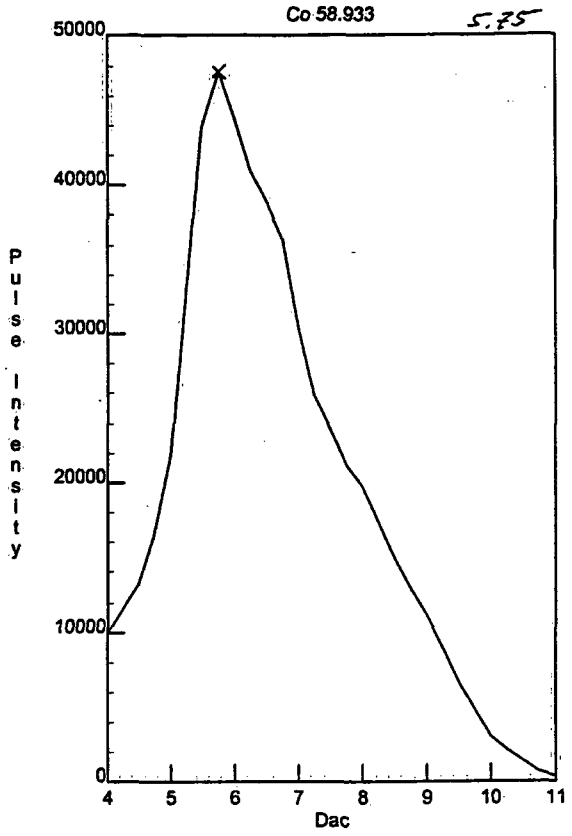
#	WorkOrder	Dilution	Date	Time	Batch	Lot	Instrument
45	CPXA3	5	04-FEB-1999	12:25:39	9019177	D9A130190	004
46	CPXA3 L		04-FEB-1999	12:30:05			004
47	CPXA3 PDS		04-FEB-1999	12:34:34			004
48	CPXA3S	5	04-FEB-1999	12:39:02	9019177	D9A130190	004
49	CPXA3X	5	04-FEB-1999	12:43:30	9019177	D9A130190	004
50	CPXA5	5	04-FEB-1999	12:48:01	9019177	D9A130190	004
51	CPXA6	5	04-FEB-1999	12:52:33	9019177	D9A130190	004
52	CPXA7	5	04-FEB-1999	12:57:08	9019177	D9A130190	004
53	QC STD 3		04-FEB-1999	13:01:59			004
54	QC STD 4		04-FEB-1999	13:06:49			004
55	CPXA8	5	04-FEB-1999	13:11:23	9019177	D9A130190	004
56	CPXA9	5	04-FEB-1999	13:16:00	9019177	D9A130190	004
57	CPXAA	5	04-FEB-1999	13:20:32	9019177	D9A130190	004
58	CPXAC	5	04-FEB-1999	13:25:08	9019177	D9A130190	004
59	CPXAD	20	04-FEB-1999	13:29:42	9019177	D9A130190	004
60	CPXAE	5	04-FEB-1999	13:34:17	9019177	D9A130190	004
61	CPXAF	5	04-FEB-1999	13:38:53	9019177	D9A130190	004
62	CPXAG	100	04-FEB-1999	13:43:23	9019177	D9A130190	004
63	CPXAH	100	04-FEB-1999	13:47:51	9019177	D9A130190	004
64	CPXAJ	100	04-FEB-1999	13:52:21	9019177	D9A130190	004
65	QC STD 3		04-FEB-1999	13:57:07			004
66	QC STD 5		04-FEB-1999	14:01:58			004
67	QC STD 5		04-FEB-1999	14:06:35			004
68	CP9NL		04-FEB-1999	14:13:22			004
69	CP9NL		04-FEB-1999	14:17:48			004
70	CPCCX		04-FEB-1999	14:22:16			004
71	CPAHXC		04-FEB-1999	14:26:43			004
72	QC STD 3		04-FEB-1999	14:31:29			004
73	QC STD 3		04-FEB-1999	14:36:14			004
74	QC STD 5		04-FEB-1999	14:40:58			004
75	QC STD 5		04-FEB-1999	14:45:34			004

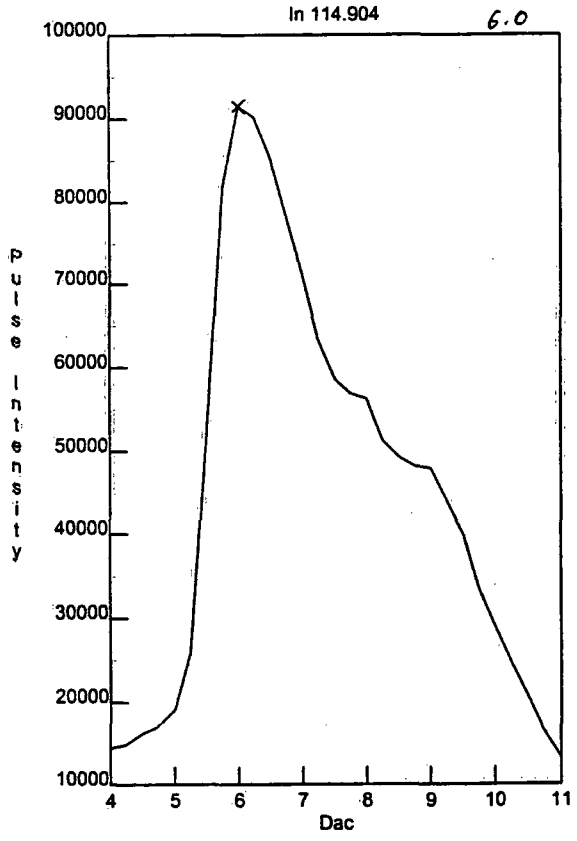
End of Report

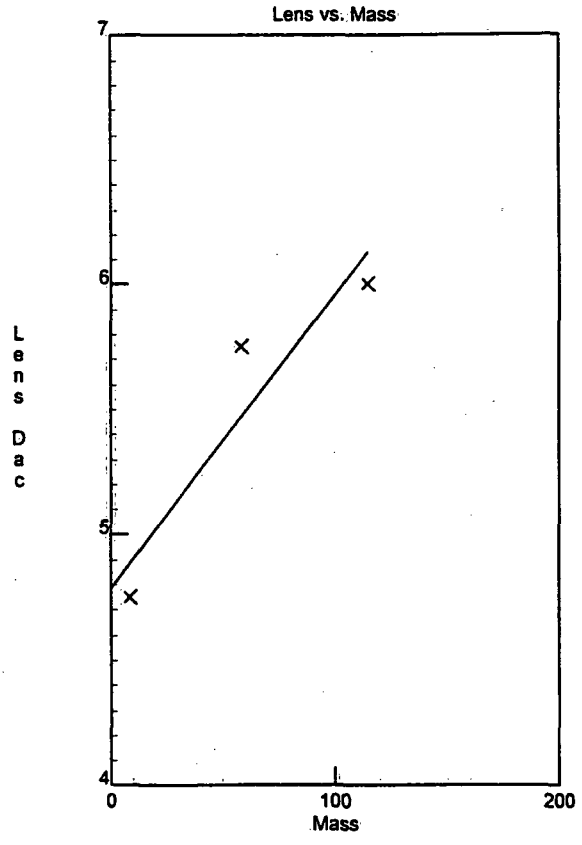

Ce 139.905 - Nebulizer Gas Flow - Formula: CeO 155.9 / Ce 139.905 < 0.03
0.07
0.06
0.05
0.04
0.03
0.02
Ratio
0.7
0.8
0.9
1
1.1
Nebulizer Gas Flow

Neb = 0.775


Be 9.012
4,75
Pulse Intensity
600
500
400
300
200
100
0
4
5
6
7
8
9
10
11
Dac


Co 58.933
5.75
Pulse Intensity
50000
40000
30000
20000
10000
0
4
5
6
7
8
9
10
11
Dac

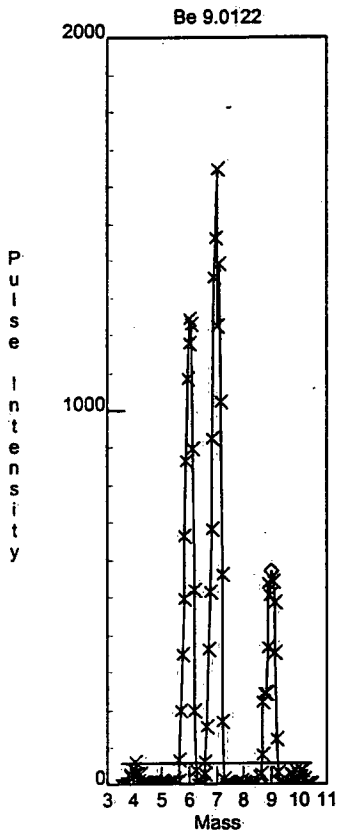

In 114.904
6.0
Pulse Intensity
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
4
5
6
7
8
9
10
11
Dac

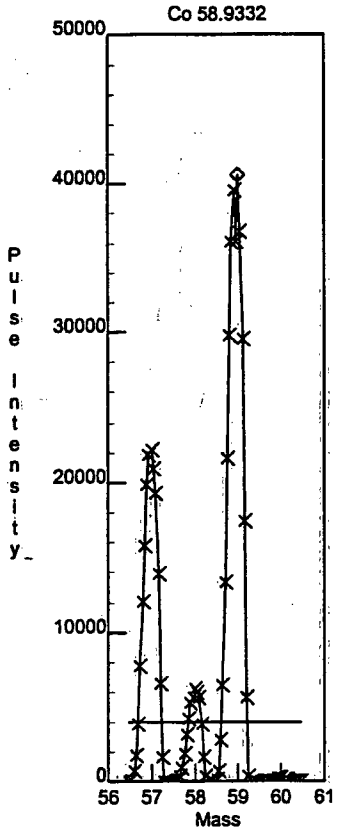

Lens vs. Mass
Lens Dac
7
6
5
4
0
100
200
Mass

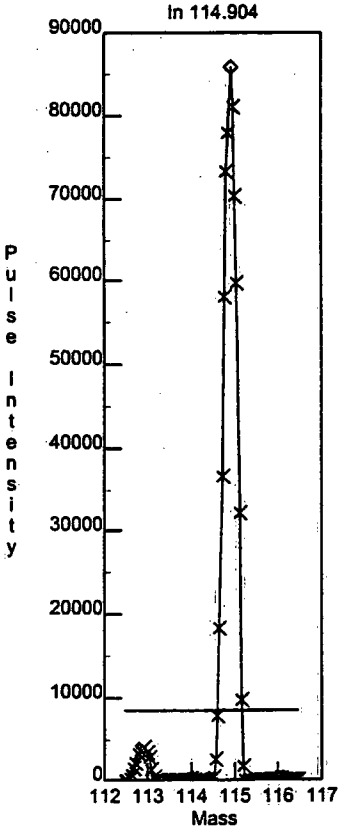
Instrument Tuning Report

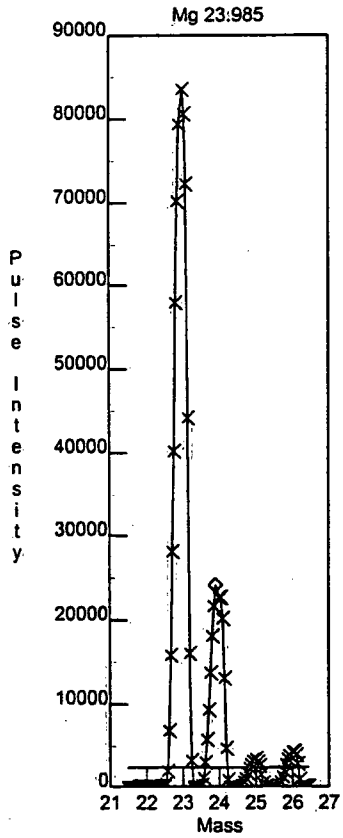
File Name: q_tune.tun
File Path: c:\elandata\Tuning

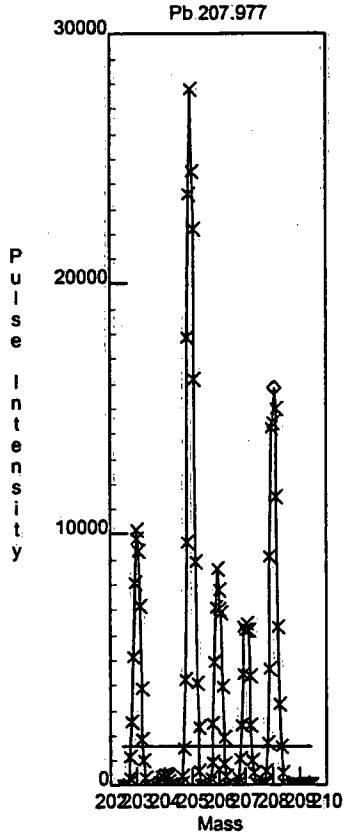
Analyte	Exact Mass	Meas. Mass	Mass DAC	Meas. Pk. Width	Res. DAC	Custom Res.
Li	7.016	7.004	1535	0.581	2164	
Be	9.012	9.003	2023	0.609	2170	
Mg	23.985	23.952	5655	0.595	2285	
Co	58.933	58.999	14183	0.595	2495	
Rh	102.905	102.901	24898	0.547	2785	
In	114.904	114.904	27822	0.550	2860	
Tl	204.975	204.954	49755	0.510	3496	
Pb	207.977	208.051	50492	0.503	3523	
U	238.050	238.054	57781	0.508	3784	

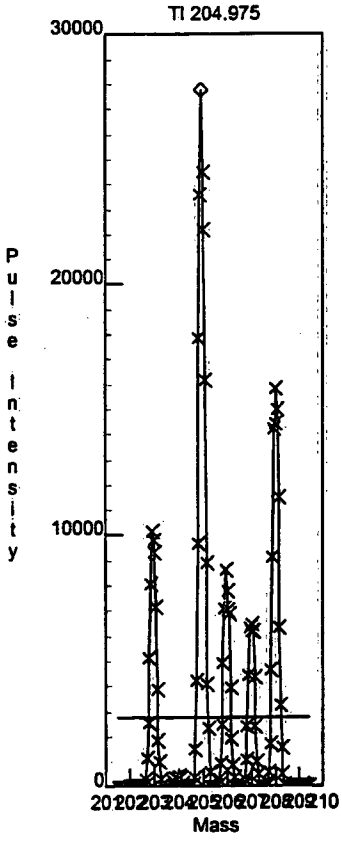

Be 9.0122
2000
1000
0
Pulse Intensity
3 4 5 6 7 8 9 10 11
Mass


Co 58.9332
50000
40000
30000
20000
10000
0
Pulse Intensity
56 57 58 59 60 61
Mass


In 114.904
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Pulse Intensity
112 113 114 115 116 117
Mass


Mg 23.985
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Pulse Intensity
21 22 23 24 25 26 27
Mass


Pb 207.977
30000
20000
10000
0
Pulse Intensity
202 203 204 205 206 207 208 209 210
Mass


Tl 204.975
30000
20000
10000
0
Pulse Intensity
202 203 204 205 206 207 208 209 210
Mass

Daily Performance Report

Sample ID: CLP Tuning Solution
Sample Date/Time: Thursday, February 04, 1999 08:24:44
Sample Description:
Sample File: C:\elandata\Sample\Q-Daily.sam
Method File: C:\elandata\Method\Q-Daily.mth
Dataset File: C:\elandata\Dataset\020499\CLP Tuning Solution.001
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Number of Replicates: 6
Dual Detector Mode: Dual

Summary

	Analyte	Mass	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Be	9	559.289	19.464	3.480
	Mg	24	23125.762	337.725	1.460
	Rh	103	88470.613	629.275	0.711
	Pb	208	20779.324	158.254	0.762
⌈>	Ba	138	58351.397	403.777	0.692
⌊	Ba++	69	0.021	0.000	1.626
⌈>	Ce	140	66647.500	482.939	0.725
⌊	CeO	156	0.029	0.000	1.166
	Bkgd	220	6.389	1.569	24.564

Dual Detector Gains

Mass	Gain
9	10067
23	10471
27	9291
37	8907
39	8588
51	8267
52	8057
54	7701
55	7796
58	7213
59	7426
63	6924
66	6886
75	7189
82	6951
98	7390
107	6665
114	6583
115	6405
121	6685
135	6496
205	6031

208	6030
232	5991
238	5988

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Blank

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 08:37:57
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\Blank.002
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67025.892	ug/L	
⌜	Be	9			6.667	ug/L	
|	Al	27			1632.443	ug/L	
|>	Sc	45			235949.974	ug/L	
|	V	51			2246.782	ug/L	
|	Cr	52			10715.459	ug/L	
|	Mn	55			1746.124	ug/L	
|	Fe	57			24224.333	ug/L	
|	Co	59			102.335	ug/L	
|	Ni	60			188.420	ug/L	
⌞	Cu	65			219.011	ug/L	
⌜>	Ge	72			468461.737	ug/L	
|	Zn	68			175.670	ug/L	
|	As	75			-28.758	ug/L	
⌞	Se	82			1.696	ug/L	
	Y	89			311135.844	ug/L	
⌜	Mo	97			55.667	ug/L	
|	Ag	107			43.334	ug/L	
|>	In	115			374857.936	ug/L	
|	Cd	111			15.889	ug/L	
|	Sn	117			107.001	ug/L	
|	Sb	121			51.001	ug/L	
⌞	Ba	135			20.000	ug/L	
	Tb	159			234770.291	ug/L	
⌜>	Ho	165			212339.863	ug/L	
|	Tl	205			152.002	ug/L	
|	Pb	208			171.002	ug/L	
⌞	U	238			17.000	ug/L	

	Bi	209	125979.854	ug/L
[>	Sc	45	235949.974	ug/L
[	Cr	50	379.885	ug/L
[	Cr	53	3000.678	ug/L
[	Ni	61	1041.715	ug/L
[	Cu	63	414.343	ug/L
[	Br	79	505.681	ug/L
[>	Ge	74	652160.165	ug/L
[	Ag	109	41.000	ug/L
[>	In	115	374857.936	ug/L
[	Pb	206	42.000	ug/L
[	Pb	207	38.000	ug/L
[>	Bi	209	125979.854	ug/L
	Hg	200	17.667	ug/L
	Pd	106	195.774	ug/L
	Kr	83	150.002	ug/L
	Ti	48	-2528.765	ug/L
	Ca	44	37292.986	ug/L

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: Standard 1

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 08:42:22
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\Standard 1.003
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 2
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67326.962	ug/L	67025.892
⌜	Be	9			5480.440	ug/L	6.667
|	Al	27			149162.869	ug/L	1632.443
|>	Sc	45			233055.178	ug/L	235949.974
|	V	51			377099.375	ug/L	2246.782
|	Cr	52			343032.095	ug/L	10715.459
|	Mn	55			530171.326	ug/L	1746.124
|	Fe	57			567819.079	ug/L	24224.333
|	Co	59			441288.289	ug/L	102.335
|	Ni	60			95766.274	ug/L	188.420
⌞	Cu	65			105427.579	ug/L	219.011
⌜>	Ge	72			475940.130	ug/L	468461.737
|	Zn	68			39738.257	ug/L	175.670
|	As	75			78774.619	ug/L	-28.758
⌞	Se	82			7118.919	ug/L	1.696
	Y	89			307441.037	ug/L	311135.844
⌜	Mo	97			88450.312	ug/L	55.667
|	Ag	107			303952.314	ug/L	43.334
|>	In	115			375672.615	ug/L	374857.936
|	Cd	111			75139.626	ug/L	15.889
|	Sn	117			68941.012	ug/L	107.001
|	Sb	121			253892.739	ug/L	51.001
⌞	Ba	135			52877.883	ug/L	20.000
	Tb	159			234133.168	ug/L	234770.291
⌜>	Ho	165			212152.589	ug/L	212339.863
|	Tl	205			296466.285	ug/L	152.002
|	Pb	208			387411.250	ug/L	171.002
⌞	U	238			281215.765	ug/L	17.000

	Bi	209	128507.071	ug/L	125979.854
⌈>	Sc	45	233055.178	ug/L	235949.974
|	Cr	50	14749.824	ug/L	379.885
L	Cr	53	42947.909	ug/L	3000.678
⌈	Ni	61	5460.433	ug/L	1041.715
|	Cu	63	218154.002	ug/L	414.343
|	Br	79	510.014	ug/L	505.681
L>	Ge	74	660835.212	ug/L	652160.165
⌈	Ag	109	286540.580	ug/L	41.000
L>	In	115	375672.615	ug/L	374857.936
⌈	Pb	206	100442.537	ug/L	42.000
|	Pb	207	84941.995	ug/L	38.000
L>	Bi	209	128507.071	ug/L	125979.854
	Hg	200	21.667	ug/L	17.667
	Pd	106	28.204	ug/L	195.774
	Kr	83	153.669	ug/L	150.002
	Ti	48	-2171.893	ug/L	-2528.765
	Ca	44	37168.328	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45				
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72				
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115				
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165				
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45				
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74				
⌈	Ag	109				
⌊>	In	115				
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209				
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 1

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 08:47:02
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 1.004
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 9
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66285.517	ug/L	67025.892
⌈	Be	9	195.1858	4.71	10626.392	ug/L	6.667
|	Al	27	196.4629	3.51	289833.489	ug/L	1632.443
|>	Sc	45			231838.452	ug/L	235949.974
|	V	51	198.4945	3.14	742172.996	ug/L	2246.782
|	Cr	52	198.6771	2.58	667422.973	ug/L	10715.459
|	Mn	55	195.0914	3.92	1026742.044	ug/L	1746.124
|	Fe	57	4879.4143	3.49	551541.292	ug/L	24224.333
|	Co	59	191.7622	2.76	841436.379	ug/L	102.335
|	Ni	60	197.0156	3.56	187503.608	ug/L	188.420
⌊	Cu	65	194.9411	5.18	204161.200	ug/L	219.011
⌈>	Ge	72			464271.103	ug/L	468461.737
|	Zn	68	197.2603	0.89	76297.408	ug/L	175.670
|	As	75	197.6471	0.65	151936.147	ug/L	-28.758
⌊	Se	82	199.9834	0.79	13886.728	ug/L	1.696
	Y	89			345679.613	ug/L	311135.844
⌈	Mo	97	407.8173	1.80	353123.880	ug/L	55.667
|	Ag	107	198.8038	1.43	591850.705	ug/L	43.334
|>	In	115			367997.719	ug/L	374857.936
|	Cd	111	197.9140	1.24	145627.908	ug/L	15.889
|	Sn	117	197.0584	2.21	132952.618	ug/L	107.001
|	Sb	121	204.6121	1.94	508830.058	ug/L	51.001
⌊	Ba	135	196.7755	2.95	101890.798	ug/L	20.000
	Tb	159			230023.861	ug/L	234770.291
⌈>	Ho	165			210632.984	ug/L	212339.863
|	Tl	205	197.1758	1.56	580340.175	ug/L	152.002
|	Pb	208	197.1748	1.40	758599.089	ug/L	171.002
⌊	U	238	205.5779	2.12	574396.943	ug/L	17.000

	Bi	209			127987.487	ug/L	125979.854
⌈>	Sc	45			231838.452	ug/L	235949.974
|	Cr	50	253.9825	3.07	36716.179	ug/L	379.885
L	Cr	53	201.3545	2.28	83028.547	ug/L	3000.678
⌈	Ni	61	195.4714	1.47	9627.675	ug/L	1041.715
|	Cu	63	202.8447	2.32	440377.873	ug/L	414.343
|	Br	79			521.681	ug/L	505.681
L>	Ge	74			658085.543	ug/L	652160.165
⌈	Ag	109	197.5939	1.07	554484.614	ug/L	41.000
L>	In	115			367997.719	ug/L	374857.936
⌈	Pb	206	200.0778	1.47	200068.333	ug/L	42.000
|	Pb	207	192.3062	0.75	162634.331	ug/L	38.000
L>	Bi	209			127987.487	ug/L	125979.854
	Hg	200			18.667	ug/L	17.667
	Pd	106			-50.503	ug/L	195.774
	Kr	83			150.336	ug/L	150.002
	Ti	48			549285.895	ug/L	-2528.765
	Ca	44			41387.619	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	97.593			
|	Al	27	98.231			
|>	Sc	45		98.257		
|	V	51	99.247			
|	Cr	52	99.339			
|	Mn	55	97.546			
|	Fe	57	97.588			
|	Co	59	95.881			
|	Ni	60	98.508			
⌊	Cu	65	97.471			
⌈>	Ge	72		99.105		
|	Zn	68	98.630			
|	As	75	98.824			
⌊	Se	82	99.992			
	Y	89				
⌈	Mo	97	101.954			
|	Ag	107	99.402			
|>	In	115		98.170		
|	Cd	111	98.957			
|	Sn	117	98.529			
|	Sb	121	102.306			
⌊	Ba	135	98.388			
	Tb	159				
⌈>	Ho	165		99.196		
|	Tl	205	98.588			
|	Pb	208	98.587			
⌊	U	238	102.789			
	Bi	209				
⌈>	Sc	45		98.257		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.909		
⌈	Ag	109				
⌊>	In	115		98.170		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.594		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 2

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 08:51:41
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 2.005
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			64617.803	ug/L	67025.892
⌜	Be	9	0.0468	40.99	9.000	ug/L	6.667
|	Al	27	0.8815	49.51	2860.656	ug/L	1632.443
|>	Sc	45			229439.803	ug/L	235949.974
|	V	51	-0.0011	1526.67	2179.889	ug/L	2246.782
|	Cr	52	-0.0910	43.33	10120.351	ug/L	10715.459
|	Mn	55	0.0072	260.62	1734.790	ug/L	1746.124
|	Fe	57	3.0110	250.32	23869.131	ug/L	24224.333
|	Co	59	0.0164	66.05	170.336	ug/L	102.335
|	Ni	60	0.0164	59.85	198.585	ug/L	188.420
⌊	Cu	65	0.0061	521.90	219.009	ug/L	219.011
⌈>	Ge	72			457435.599	ug/L	468461.737
|	Zn	68	-0.0620	27.55	148.002	ug/L	175.670
|	As	75	-0.0114	420.11	-37.175	ug/L	-28.758
⌊	Se	82	-0.1062	136.83	-5.673	ug/L	1.696
	Y	89			304664.804	ug/L	311135.844
⌈	Mo	97	0.3041	38.66	310.340	ug/L	55.667
|	Ag	107	0.1141	27.07	373.675	ug/L	43.334
|>	In	115			361369.364	ug/L	374857.936
|	Cd	111	0.0048	68.55	18.713	ug/L	15.889
|	Sn	117	0.1383	20.26	194.337	ug/L	107.001
|	Sb	121	0.9482	29.76	2352.226	ug/L	51.001
⌊	Ba	135	0.0174	79.57	28.000	ug/L	20.000
	Tb	159			222405.115	ug/L	234770.291
⌈>	Ho	165			202163.992	ug/L	212339.863
|	Tl	205	-0.0035	73.21	134.669	ug/L	152.002
|	Pb	208	0.0060	172.36	184.336	ug/L	171.002
⌊	U	238	0.0511	52.33	152.002	ug/L	17.000

	Bi	209			122202.371	ug/L	125979.854
⌈>	Sc	45			229439.803	ug/L	235949.974
|	Cr	50	-0.4786	58.05	301.218	ug/L	379.885
L	Cr	53	-1.0913	26.83	2486.908	ug/L	3000.678
⌈	Ni	61	-0.3233	147.40	1009.379	ug/L	1041.715
|	Cu	63	0.0143	64.29	437.011	ug/L	414.343
|	Br	79			467.679	ug/L	505.681
L>	Ge	74			640628.919	ug/L	652160.165
⌈	Ag	109	0.1113	32.47	344.341	ug/L	41.000
L>	In	115			361369.364	ug/L	374857.936
⌈	Pb	206	0.0056	270.06	46.001	ug/L	42.000
|	Pb	207	0.0076	75.69	43.000	ug/L	38.000
L>	Bi	209			122202.371	ug/L	125979.854
	Hg	200			14.333	ug/L	17.667
	Pd	106			198.782	ug/L	195.774
	Kr	83			154.002	ug/L	150.002
	Ti	48			-2261.356	ug/L	-2528.765
	Ca	44			34380.666	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		97.241		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		97.646		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		96.402		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		95.208		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		97.241		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.232		
⌈	Ag	109				
⌊>	In	115		96.402		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		97.002		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: ICSA

Sample Description: ICSA
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 08:57:40
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\ICSA.006
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 6
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			64211.756	ug/L	67025.892
⌜	Be	9	0.0027	1808.24	7.000	ug/L	6.667
|	Al	27	94867.9471	2.50	147119911.580	ug/L	1632.443
|>	Sc	45			244749.953	ug/L	235949.974
|	V	51	-1.0774	63.39	-1844.112	ug/L	2246.782
|	Cr	52	9.7615	4.87	45187.236	ug/L	10715.459
|	Mn	55	4.4118	5.49	26265.725	ug/L	1746.124
|	Fe	57	102654.8658	2.74	11745662.168	ug/L	24224.333
|	Co	59	0.6640	4.32	3180.052	ug/L	102.335
|	Ni	60	2.9857	11.12	3190.951	ug/L	188.420
⌞	Cu	65	1.3563	5.23	1728.086	ug/L	219.011
⌜>	Ge	72			505831.116	ug/L	468461.737
|	Zn	68	2.1869	7.10	1110.054	ug/L	175.670
|	As	75	-0.3253	16.31	-304.200	ug/L	-28.758
⌞	Se	82	-0.9628	33.66	-71.225	ug/L	1.696
	Y	89			322300.385	ug/L	311135.844
⌜	Mo	97	2114.6895	1.85	1807587.449	ug/L	55.667
|	Ag	107	0.1516	18.30	486.680	ug/L	43.334
|>	In	115			363209.834	ug/L	374857.936
|	Cd	111	-0.1503	75.86	-93.705	ug/L	15.889
|	Sn	117	0.1946	9.12	233.004	ug/L	107.001
|	Sb	121	1.8090	2.24	4488.083	ug/L	51.001
⌞	Ba	135	0.8613	4.89	459.345	ug/L	20.000
	Tb	159			225232.353	ug/L	234770.291
⌜>	Ho	165			204379.422	ug/L	212339.863
|	Tl	205	-0.0005	2930.58	144.336	ug/L	152.002
|	Pb	208	1.2116	1.74	4687.342	ug/L	171.002
⌞	U	238	0.0143	14.22	55.001	ug/L	17.000

	Bi	209			116356.241	ug/L	125979.854
⌈>	Sc	45			244749.953	ug/L	235949.974
|	Cr	50	204.1284	38.07	31038.483	ug/L	379.885
L	Cr	53	64.9043	1.09	30371.597	ug/L	3000.678
⌈	Ni	61	84.6502	5.01	4931.234	ug/L	1041.715
|	Cu	63	3.2312	4.23	7693.821	ug/L	414.343
|	Br	79			7662.824	ug/L	505.681
L>	Ge	74			681544.303	ug/L	652160.165
⌈	Ag	109	0.1549	16.42	468.012	ug/L	41.000
L>	In	115			363209.834	ug/L	374857.936
⌈	Pb	206	1.3199	3.78	1239.400	ug/L	42.000
|	Pb	207	1.3101	2.15	1042.048	ug/L	38.000
L>	Bi	209			116356.241	ug/L	125979.854
	Hg	200			28.667	ug/L	17.667
	Pd	106			-98.221	ug/L	195.774
	Kr	83			294.006	ug/L	150.002
	Ti	48			6286316.408	ug/L	-2528.765
	Ca	44			10435058.217	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		103.730		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		107.977		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		96.893		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		96.251		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		103.730		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		104.506		
	Ag	109				
>	In	115		96.893		
	Pb	206				
	Pb	207				
>	Bi	209		92.361		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: ICSA

Sample Description: ICSAB
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 09:03:10
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\ICSA.007
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 7
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66127.786	ug/L	67025.892
⌈	Be	9	95.0965	1.55	5418.083	ug/L	6.667
|	Al	27	93798.1049	3.86	143944002.512	ug/L	1632.443
|>	Sc	45			242192.689	ug/L	235949.974
|	V	51	93.7988	1.40	367798.770	ug/L	2246.782
|	Cr	52	103.2867	1.11	367799.166	ug/L	10715.459
|	Mn	55	99.5558	2.58	548403.389	ug/L	1746.124
|	Fe	57	100178.4169	1.60	11349220.213	ug/L	24224.333
|	Co	59	92.5155	0.87	424332.697	ug/L	102.335
|	Ni	60	91.3267	1.58	90945.942	ug/L	188.420
L	Cu	65	87.3437	1.62	95728.439	ug/L	219.011
⌈>	Ge	72			483583.668	ug/L	468461.737
|	Zn	68	94.6807	2.55	38239.857	ug/L	175.670
|	As	75	99.4935	4.47	79640.467	ug/L	-28.758
L	Se	82	100.6427	5.73	7279.996	ug/L	1.696
	Y	89			318293.492	ug/L	311135.844
⌈	Mo	97	2125.8551	3.81	1827457.990	ug/L	55.667
|	Ag	107	92.9174	2.19	274719.141	ug/L	43.334
|>	In	115			365624.515	ug/L	374857.936
|	Cd	111	94.8080	1.60	69316.898	ug/L	15.889
|	Sn	117	99.3068	2.05	66592.240	ug/L	107.001
|	Sb	121	104.2621	2.43	257513.992	ug/L	51.001
L	Ba	135	99.0623	3.05	50947.211	ug/L	20.000
	Tb	159			229822.279	ug/L	234770.291
⌈>	Ho	165			208351.699	ug/L	212339.863
|	Tl	205	93.4564	0.41	272158.058	ug/L	152.002
|	Pb	208	94.3183	0.15	358995.965	ug/L	171.002
L	U	238	99.7781	1.97	275788.718	ug/L	17.000

	Bi	209			117040.800	ug/L	125979.854
⌈>	Sc	45			242192.689	ug/L	235949.974
|	Cr	50	240.4945	14.48	36298.811	ug/L	379.885
L	Cr	53	159.2658	0.97	69255.205	ug/L	3000.678
⌈	Ni	61	178.2766	2.76	8796.464	ug/L	1041.715
|	Cu	63	97.5968	0.91	210221.246	ug/L	414.343
|	Br	79			7137.208	ug/L	505.681
L>	Ge	74			652396.897	ug/L	652160.165
⌈	Ag	109	91.2833	2.27	254424.365	ug/L	41.000
L>	In	115			365624.515	ug/L	374857.936
⌈	Pb	206	102.0114	0.95	93329.243	ug/L	42.000
|	Pb	207	101.3474	0.53	78406.770	ug/L	38.000
L>	Bi	209			117040.800	ug/L	125979.854
	Hg	200			28.000	ug/L	17.667
	Pd	106			-35.638	ug/L	195.774
	Kr	83			277.339	ug/L	150.002
	Ti	48			5983564.561	ug/L	-2528.765
	Ca	44			9951543.260	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9			95.094	
|	Al	27				
|>	Sc	45		102.646		
|	V	51			94.876	
|	Cr	52			93.525	
|	Mn	55			95.144	
|	Fe	57				
|	Co	59			91.852	
|	Ni	60			88.341	
⌊	Cu	65			85.987	
⌈>	Ge	72		103.228		
|	Zn	68			92.494	
|	As	75			99.819	
⌊	Se	82			101.606	
	Y	89				
⌈	Mo	97				
|	Ag	107			92.766	
|>	In	115		97.537		
|	Cd	111			94.958	
|	Sn	117			99.112	
|	Sb	121			102.453	
⌊	Ba	135			98.201	
	Tb	159				
⌈>	Ho	165		98.122		
|	Tl	205			93.457	
|	Pb	208			93.107	
⌊	U	238			99.764	
	Bi	209				
⌈>	Sc	45		102.646		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.036		
⌈	Ag	109				
⌊>	In	115		97.537		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		92.904		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: BLANK

Sample Description: Blank Following ICSAB
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 09:07:38
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\BLANK.008
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67457.908	ug/L	67025.892
⌜	Be	9	0.0232	101.70	8.000	ug/L	6.667
|	Al	27	8.8849	53.49	14875.200	ug/L	1632.443
|>	Sc	45			238345.921	ug/L	235949.974
|	V •	51	-0.2256	20.68	1403.565	ug/L	2246.782
|	Cr	52	0.1189	108.20	11217.181	ug/L	10715.459
|	Mn	55	1.2454	52.35	8402.789	ug/L	1746.124
|	Fe	57	3.3164	257.29	24815.064	ug/L	24224.333
|	Co	59	0.0084	85.63	140.335	ug/L	102.335
|	Ni	60	0.0162	147.99	205.717	ug/L	188.420
⌞	Cu	65	0.0731	27.35	299.308	ug/L	219.011
⌜>	Ge	72			460484.133	ug/L	468461.737
|	Zn	68	-0.0179	105.96	165.669	ug/L	175.670
|	As	75	0.0649	87.26	22.131	ug/L	-28.758
⌞	Se	82	0.0392	782.56	4.006	ug/L	1.696
	Y	89			315703.643	ug/L	311135.844
⌜	Mo	97	1.4965	44.73	1390.756	ug/L	55.667
|	Ag	107	0.0378	36.40	160.336	ug/L	43.334
|>	In	115			382351.823	ug/L	374857.936
|	Cd	111	0.0136	54.42	26.552	ug/L	15.889
|	Sn	117	0.0450	97.22	140.002	ug/L	107.001
|	Sb	121	0.8117	38.08	2133.193	ug/L	51.001
⌞	Ba	135	-0.0039	51.85	18.334	ug/L	20.000
	Tb	159			235255.646	ug/L	234770.291
⌜>	Ho	165			211769.065	ug/L	212339.863
|	Tl	205	0.0334	17.86	250.671	ug/L	152.002
|	Pb	208	0.0531	42.03	374.672	ug/L	171.002
⌞	U	238	0.0314	37.95	104.668	ug/L	17.000

	Bi	209			124213.984	ug/L	125979.854
[>	Sc	45			238345.921	ug/L	235949.974
[	Cr	50	-0.3550	40.77	331.267	ug/L	379.885
[	Cr	53	8.9091	35.86	6639.967	ug/L	3000.678
[	Ni	61	2.1489	5.31	1123.055	ug/L	1041.715
[	Cu	63	0.2976	29.02	1039.049	ug/L	414.343
[	Br	79			1806.804	ug/L	505.681
[>	Ge	74			645195.330	ug/L	652160.165
[	Ag	109	0.0334	29.34	138.669	ug/L	41.000
[>	In	115			382351.823	ug/L	374857.936
[	Pb	206	0.0656	21.72	105.001	ug/L	42.000
[	Pb	207	0.0528	52.32	80.668	ug/L	38.000
[>	Bi	209			124213.984	ug/L	125979.854
	Hg	200			20.000	ug/L	17.667
	Pd	106			203.139	ug/L	195.774
	Kr	83			152.669	ug/L	150.002
	Ti	48			-846.765	ug/L	-2528.765
	Ca	44			38217.783	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		101.015		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.297		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.999		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.731		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		101.015		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.932		
⌈	Ag	109				
⌊>	In	115		101.999		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.598		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 09:12:21
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 3.009
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68562.902	ug/L	67025.892
⌈	Be	9	99.6053	1.98	5541.797	ug/L	6.667
|	Al	27	103.4920	3.57	156608.373	ug/L	1632.443
|>	Sc	45			236633.121	ug/L	235949.974
|	V	51	99.3586	1.36	380516.479	ug/L	2246.782
|	Cr	52	98.9867	1.16	344911.876	ug/L	10715.459
|	Mn	55	99.6097	1.85	536120.925	ug/L	1746.124
|	Fe	57	4900.3003	3.14	565406.637	ug/L	24224.333
|	Co	59	98.1819	1.83	439847.865	ug/L	102.335
|	Ni	60	97.8479	0.88	95177.245	ug/L	188.420
L	Cu	65	95.1140	2.32	101807.677	ug/L	219.011
⌈>	Ge	72			473206.241	ug/L	468461.737
|	Zn	68	98.9629	1.93	39098.491	ug/L	175.670
|	As	75	102.6732	0.65	80421.668	ug/L	-28.758
L	Se	82	102.6753	1.75	7269.384	ug/L	1.696
	Y	89			317923.518	ug/L	311135.844
⌈	Mo	97	102.2926	0.89	90911.638	ug/L	55.667
|	Ag	107	100.2296	0.44	306177.449	ug/L	43.334
|>	In	115			377542.407	ug/L	374857.936
|	Cd	111	98.9731	1.01	74720.792	ug/L	15.889
|	Sn	117	98.2176	1.82	68044.078	ug/L	107.001
|	Sb	121	101.1201	1.00	258035.206	ug/L	51.001
L	Ba	135	98.4654	0.93	52334.912	ug/L	20.000
	Tb	159			232441.934	ug/L	234770.291
⌈>	Ho	165			210364.954	ug/L	212339.863
|	Tl	205	98.9847	1.74	290934.082	ug/L	152.002
|	Pb	208	99.6813	2.60	382930.411	ug/L	171.002
L	U	238	101.3154	1.99	282647.967	ug/L	17.000

	Bi	209			126768.088	ug/L	125979.854
⌈>	Sc	45			236633.121	ug/L	235949.974
|	Cr	50	102.3679	0.79	15324.504	ug/L	379.885
L	Cr	53	102.6334	1.81	44667.852	ug/L	3000.678
⌈	Ni	61	97.7975	1.57	5354.724	ug/L	1041.715
|	Cu	63	100.2925	2.03	218396.926	ug/L	414.343
|	Br	79			946.374	ug/L	505.681
L>	Ge	74			659825.337	ug/L	652160.165
⌈	Ag	109	99.2962	1.11	285949.946	ug/L	41.000
L>	In	115			377542.407	ug/L	374857.936
⌈	Pb	206	100.1686	1.62	99237.161	ug/L	42.000
|	Pb	207	100.2484	2.51	83974.962	ug/L	38.000
L>	Bi	209			126768.088	ug/L	125979.854
	Hg	200			16.667	ug/L	17.667
	Pd	106			382.461	ug/L	195.774
	Kr	83			147.336	ug/L	150.002
	Ti	48			-1892.406	ug/L	-2528.765
	Ca	44			36649.990	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9	99.605			
|	Al	27	103.492			
|>	Sc	45		100.290		
|	V	51	99.359			
|	Cr	52	98.987			
|	Mn	55	99.610			
|	Fe	57	98.006			
|	Co	59	98.182			
|	Ni	60	97.848			
⌊	Cu	65	95.114			
⌈>	Ge	72		101.013		
|	Zn	68	98.963			
|	As	75	102.673			
⌊	Se	82	102.675			
	Y	89				
⌈	Mo	97	102.293			
|	Ag	107	100.230			
|>	In	115		100.716		
|	Cd	111	98.973			
|	Sn	117	98.218			
|	Sb	121	101.120			
⌊	Ba	135	98.465			
	Tb	159				
⌈>	Ho	165		99.070		
|	Tl	205	98.985			
|	Pb	208	99.681			
⌊	U	238	101.315			
	Bi	209				
⌈>	Sc	45		100.290		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.175		
⌈	Ag	109				
⌊>	In	115		100.716		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		100.626		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 5

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 09:17:06
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 5.010
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67572.460	ug/L	67025.892
⌜	Be	9	-0.0007	4263.15	6.667	ug/L	6.667
|	Al	27	0.8556	12.60	2942.666	ug/L	1632.443
|>	Sc	45			238813.587	ug/L	235949.974
|	V *	51	-0.0933	68.44	1918.424	ug/L	2246.782
|	Cr	52	-0.1875	54.02	10201.412	ug/L	10715.459
|	Mn	55	0.0367	25.67	1965.155	ug/L	1746.124
|	Fe	57	-4.8906	191.63	23950.885	ug/L	24224.333
|	Co	59	0.0088	37.12	143.002	ug/L	102.335
|	Ni	60	0.0222	50.79	212.652	ug/L	188.420
⌊	Cu	65	-0.0028	253.74	218.605	ug/L	219.011
⌜>	Ge	72			465455.058	ug/L	468461.737
|	Zn	68	-0.1230	16.53	127.002	ug/L	175.670
|	As	75	-0.0424	176.68	-60.898	ug/L	-28.758
⌊	Se	82	-0.2686	111.13	-17.047	ug/L	1.696
	Y	89			309611.726	ug/L	311135.844
⌜	Mo	97	0.2077	17.57	239.338	ug/L	55.667
|	Ag	107	0.0603	36.34	226.671	ug/L	43.334
|>	In	115			375608.184	ug/L	374857.936
|	Cd	111	-0.0014	136.98	14.855	ug/L	15.889
|	Sn	117	0.1944	18.16	241.004	ug/L	107.001
|	Sb	121	0.9974	28.78	2581.605	ug/L	51.001
⌊	Ba	135	-0.0064	122.92	16.667	ug/L	20.000
	Tb	159			230073.524	ug/L	234770.291
⌜>	Ho	165			209132.087	ug/L	212339.863
|	Tl	205	0.0004	1789.87	151.002	ug/L	152.002
|	Pb	208	0.0007	1167.16	171.002	ug/L	171.002
⌊	U	238	0.0288	25.76	96.668	ug/L	17.000

	Bi	209			124293.698	ug/L	125979.854
⌈>	Sc	45			238813.587	ug/L	235949.974
|	Cr	50	-0.4946	50.44	311.882	ug/L	379.885
L	Cr	53	1.5118	42.88	3651.170	ug/L	3000.678
⌈	Ni	61	1.6508	100.82	1108.054	ug/L	1041.715
|	Cu	63	0.0378	47.41	493.013	ug/L	414.343
|	Br	79			697.024	ug/L	505.681
L>	Ge	74			649494.881	ug/L	652160.165
⌈	Ag	109	0.0585	26.90	208.670	ug/L	41.000
L>	In	115			375608.184	ug/L	374857.936
⌈	Pb	206	0.0002	2391.13	41.667	ug/L	42.000
|	Pb	207	0.0047	112.06	41.334	ug/L	38.000
L>	Bi	209			124293.698	ug/L	125979.854
	Hg	200			21.334	ug/L	17.667
	Pd	106			218.506	ug/L	195.774
	Kr	83			158.669	ug/L	150.002
	Ti	48			-2143.680	ug/L	-2528.765
	Ca	44			35046.289	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		101.214		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		99.358		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		100.200		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.489		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		101.214		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		99.591		
⌈	Ag	109				
⌊>	In	115		100.200		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.662		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ2HMB

Sample Description: Method Blank Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:30:24
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CQ2HMB.011
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 24
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67313.261	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	-2.9542	114.67	5.000	ug/L	6.667
|	Al	27	505.9049	2.51	9190.715	ug/L	1632.443
|>	Sc	45			236016.246	ug/L	235949.974
|	V	51	7.8307	58.30	2542.758	ug/L	2246.782
|	Cr	52	5.5173	85.88	10900.934	ug/L	10715.459
|	Mn	55	15.4306	19.45	2569.924	ug/L	1746.124
|	Fe	57	966.9467	77.93	25279.404	ug/L	24224.333
|	Co	59	0.8394	35.53	139.669	ug/L	102.335
|	Ni	60	30.6780	10.85	485.126	ug/L	188.420
⌊	Cu	65	171.1740	3.05	2042.118	ug/L	219.011
⌜>	Ge	72			463250.514	ug/L	468461.737
|	Zn	68	3222.1338	1.44	12579.328	ug/L	175.670
|	As	75	8.4487	132.01	35.486	ug/L	-28.758
⌊	Se	82	8.9021	233.94	7.844	ug/L	1.696
	Y	89			303253.532	ug/L	311135.844
⌜	Mo	97	16.8714	30.28	202.003	ug/L	55.667
|	Ag	107	0.9747	30.28	72.334	ug/L	43.334
|>	In	115			371492.384	ug/L	374857.936
|	Cd	111	0.9397	138.10	22.596	ug/L	15.889
|	Sn	117	931.4234	2.55	6444.185	ug/L	107.001
|	Sb	121	10.0124	6.17	301.673	ug/L	51.001
⌊	Ba	135	58.1694	6.89	323.674	ug/L	20.000
	Tb	159			230321.059	ug/L	234770.291
⌜>	Ho	165			211054.594	ug/L	212339.863
|	Tl	205	-2.4048	35.03	80.001	ug/L	152.002
|	Pb	208	21.3621	6.88	992.690	ug/L	171.002
⌊	U	238	0.4090	44.35	28.334	ug/L	17.000

	Bi	209			124378.363	ug/L	125979.854
[>	Sc	45			236016.246	ug/L	235949.974
[	Cr	50	-61.2478	44.04	290.784	ug/L	379.885
[	Cr	53	-15.7388	227.52	2935.665	ug/L	3000.678
[	Ni	61	111.8480	127.73	1058.383	ug/L	1041.715
[	Cu	63	190.2613	4.37	4371.046	ug/L	414.343
[	Br	79			636.354	ug/L	505.681
[>	Ge	74			633399.183	ug/L	652160.165
[	Ag	109	0.7545	16.14	62.001	ug/L	41.000
[>	In	115			371492.384	ug/L	374857.936
[	Pb	206	23.2776	1.40	267.672	ug/L	42.000
[	Pb	207	22.1755	9.49	219.671	ug/L	38.000
[>	Bi	209			124378.363	ug/L	125979.854
	Hg	200			21.667	ug/L	17.667
	Pd	106			188.757	ug/L	195.774
	Kr	83			133.002	ug/L	150.002
	Ti	48			-779.285	ug/L	-2528.765
	Ca	44			47220.389	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		100.028		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.888		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.102		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.395		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		100.028		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		97.123		
⌈	Ag	109				
⌊>	In	115		99.102		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		98.729		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ2HMC

Sample Description: DCS Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:34:49
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CQ2HMC.012
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 25
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66330.965	~~ug/L~~ ug/kg	67025.892
⌈	Be	9	18474.8363	2.41	10145.703	ug/L	6.667
|	Al	27	18700.3852	1.65	278306.264	ug/L	1632.443
|>	Sc	45			233706.522	ug/L	235949.974
|	V	51	18132.3845	3.35	683844.048	ug/L	2246.782
|	Cr	52	18326.6595	4.19	621649.172	ug/L	10715.459
|	Mn	55	18216.3087	2.80	967163.857	ug/L	1746.124
|	Fe	57	1151.8947	66.17	25249.771	ug/L	24224.333
|	Co	59	17691.3566	3.54	782719.247	ug/L	102.335
|	Ni	60	17571.6221	2.08	168650.590	ug/L	188.420
⌊	Cu	65	17920.2391	2.12	189275.254	ug/L	219.011
⌈>	Ge	72			449739.541	ug/L	468461.737
|	Zn	68	21882.4835	0.34	81974.004	ug/L	175.670
|	As	75	19392.2762	1.53	144386.545	ug/L	-28.758
⌊	Se	82	19859.7209	3.18	13358.317	ug/L	1.696
	Y	89			308274.357	ug/L	311135.844
⌈	Mo	97	19283.7277	2.99	167672.341	ug/L	55.667
|	Ag	107	18940.0331	1.79	566432.713	ug/L	43.334
|>	In	115			369586.538	ug/L	374857.936
|	Cd	111	18567.4024	0.58	137232.133	ug/L	15.889
|	Sn	117	1057.1127	4.14	7267.592	ug/L	107.001
|	Sb	121	19469.9582	1.10	486299.803	ug/L	51.001
⌊	Ba	135	18595.0087	1.86	96722.736	ug/L	20.000
	Tb	159			230533.563	ug/L	234770.291
⌈>	Ho	165			209369.854	ug/L	212339.863
|	Tl	205	18345.2798	1.35	536666.257	ug/L	152.002
|	Pb	208	18496.6985	1.18	707319.171	ug/L	171.002
⌊	U	238	18796.2019	2.16	521959.526	ug/L	17.000

TV = 20,000 µg/kg

	Bi	209			125361.235	ug/L	125979.854
⌈>	Sc	45			233706.522	ug/L	235949.974
⌊	Cr	50	19005.7994	3.64	27778.253	ug/L	379.885
⌊	Cr	53	18663.1306	3.77	77793.158	ug/L	3000.678
⌈	Ni	61	17896.3149	1.78	8691.397	ug/L	1041.715
⌊	Cu	63	18837.6445	1.92	399161.735	ug/L	414.343
⌊	Br	79			661.022	ug/L	505.681
⌊>	Ge	74			642514.564	ug/L	652160.165
⌈	Ag	109	18798.2724	1.44	529924.273	ug/L	41.000
⌊>	In	115			369586.538	ug/L	374857.936
⌈	Pb	206	18826.5880	0.92	184446.625	ug/L	42.000
⌊	Pb	207	18798.2282	0.77	155731.815	ug/L	38.000
⌊>	Bi	209			125361.235	ug/L	125979.854
	Hg	200			21.334	ug/L	17.667
	Pd	106			188.005	ug/L	195.774
	Kr	83			137.002	ug/L	150.002
	Ti	48			-1052.116	ug/L	-2528.765
	Ca	44			49289.378	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		99.049		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		96.003		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.594		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.601		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		99.049		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.521		
⌈	Ag	109				
⌊>	In	115		98.594		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		99.509		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CQ2HML

Sample Description: DCS Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:39:14
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CQ2HML.013
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 26
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66339.766	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	18661.6939	3.79	10072.318	ug/L	6.667
|	Al	27	18642.2640	1.57	272785.088	ug/L	1632.443
|>	Sc	45			229749.902	ug/L	235949.974
|	V	51	18244.3737	3.89	676228.477	ug/L	2246.782
|	Cr	52	18121.6553	2.74	604159.753	ug/L	10715.459
|	Mn	55	18526.0954	3.48	966527.226	ug/L	1746.124
|	Fe	57	2110.4676	34.49	25840.880	ug/L	24224.333
|	Co	59	18299.5884	2.05	796061.897	ug/L	102.335
|	Ni	60	17805.5093	3.94	167948.775	ug/L	188.420
⌊	Cu	65	17832.1666	3.24	185138.986	ug/L	219.011
⌈>	Ge	72			460303.042	ug/L	468461.737
|	Zn	68	19560.1901	0.10	75015.226	ug/L	175.670
|	As	75	18945.6697	1.11	144393.054	ug/L	-28.758
⌊	Se	82	19390.0678	2.83	13352.622	ug/L	1.696
	Y	89			303444.094	ug/L	311135.844
⌈	Mo	97	19005.6009	3.27	163175.195	ug/L	55.667
|	Ag	107	17770.0094	1.97	524545.728	ug/L	43.334
|>	In	115			364835.232	ug/L	374857.936
|	Cd	111	18581.3824	3.18	135544.776	ug/L	15.889
|	Sn	117	841.9543	1.39	5732.875	ug/L	107.001
|	Sb	121	18940.2835	1.30	466934.690	ug/L	51.001
⌊	Ba	135	18457.7294	2.25	94759.189	ug/L	20.000
	Tb	159			230496.670	ug/L	234770.291
⌈>	Ho	165			209140.003	ug/L	212339.863
|	Tl	205	18196.7808	0.07	531746.642	ug/L	152.002
|	Pb	208	18344.0431	0.82	700713.620	ug/L	171.002
⌊	U	238	19077.9214	1.19	529205.452	ug/L	17.000

TV = 20,000 ug/kg

	Bi	209			127039.052	ug/L	125979.854
⌈>	Sc	45			229749.902	ug/L	235949.974
|	Cr	50	18881.5663	1.16	27123.963	ug/L	379.885
L	Cr	53	18386.4841	3.06	75372.761	ug/L	3000.678
⌈	Ni	61	17575.8081	4.75	8515.622	ug/L	1041.715
|	Cu	63	18811.0498	3.81	396909.196	ug/L	414.343
|	Br	79			608.019	ug/L	505.681
L>	Ge	74			640276.112	ug/L	652160.165
⌈	Ag	109	17838.4308	3.38	496242.734	ug/L	41.000
L>	In	115			364835.232	ug/L	374857.936
⌈	Pb	206	18263.8920	0.92	181343.568	ug/L	42.000
|	Pb	207	18246.1006	0.33	153187.986	ug/L	38.000
L>	Bi	209			127039.052	ug/L	125979.854
	Hg	200			16.000	ug/L	17.667
	Pd	106			-94.422	ug/L	195.774
	Kr	83			140.335	ug/L	150.002
	Ti	48			-1221.877	ug/L	-2528.765
	Ca	44			48021.724	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		97.372		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.258		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		97.326		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		98.493		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		97.372		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.178		
⌈	Ag	109				
⌊>	In	115		97.326		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		100.841		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA1

Sample Description: D9A130190 Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:43:39
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA1.014
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 27
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			63609.310	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	272.9252	3.23	208.670	ug/L	6.667
|	Al	27	4016302.4032	1.52	79319575.354	ug/L	1632.443
|>	Sc	45			311979.621	ug/L	235949.974
|	V	51	10331.5511	0.81	521390.980	ug/L	2246.782
|	Cr	52	8251.4223	1.36	381529.429	ug/L	10715.459
|	Mn	55	167232.1873	4.67	11822363.011	ug/L	1746.124
|	Fe	57	6032407.7100	1.36	8817132.081	ug/L	24224.333
|	Co	59	5871.4819	1.92	346858.265	ug/L	102.335
|	Ni	60	4884.2814	0.82	62751.038	ug/L	188.420
L	Cu	65	14376.2583	1.68	202731.756	ug/L	219.011
⌜>	Ge	72			463456.951	ug/L	468461.737
|	Zn	68	246537.3499	4.09	948806.771	ug/L	175.670
|	As	75	12841.9191	3.49	98443.331	ug/L	-28.758
L	Se	82	395.3220	5.21	276.105	ug/L	1.696
	Y	89			1255722.551	ug/L	311135.844
⌜	Mo	97	1352.0804	3.11	11591.487	ug/L	55.667
|	Ag	107	332.9605	3.81	9809.133	ug/L	43.334
|>	In	115			362715.392	ug/L	374857.936
|	Cd	111	2939.5754	1.29	21336.997	ug/L	15.889
|	Sn	117	296.7091	1.28	2075.171	ug/L	107.001
|	Sb	121	200.4410	3.64	4962.246	ug/L	51.001
L	Ba	135	123635.9471	0.62	631082.590	ug/L	20.000
	Tb	159			247089.635	ug/L	234770.291
⌜>	Ho	165			222223.758	ug/L	212339.863
|	Tl	205	190.0100	2.34	6057.679	ug/L	152.002
|	Pb	208	128729.8065	0.99	5223948.988	ug/L	171.002
L	U	238	1038.1360	1.21	30617.425	ug/L	17.000

	Bi	209			130407.297	ug/L	125979.854
[>	Sc	45			311979.621	ug/L	235949.974
[	Cr	50	60042.5702	8.35	115821.837	ug/L	379.885
[	Cr	53	8060.9561	0.09	47116.774	ug/L	3000.678
[	Ni	61	10410.3860	3.87	5422.083	ug/L	1041.715
[	Cu	63	20912.9924	2.87	438103.886	ug/L	414.343
[	Br	79			6963.101	ug/L	505.681
[>	Ge	74			635542.607	ug/L	652160.165
[	Ag	109	355.4683	4.92	9868.844	ug/L	41.000
[>	In	115			362715.392	ug/L	374857.936
[	Pb	206	132600.0832	0.42	1351111.046	ug/L	42.000
[	Pb	207	130784.6392	0.96	1126741.492	ug/L	38.000
[>	Bi	209			130407.297	ug/L	125979.854
	Hg	200			3934.582	ug/L	17.667
	Pd	106			4378.248	ug/L	195.774
	Kr	83			334.341	ug/L	150.002
	Ti	48			8121880.027	ug/L	-2528.765
	Ca	44			3923719.853	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		132.223		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		98.932		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		96.761		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		104.655		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		132.223		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		97.452		
⌈	Ag	109				
⌊>	In	115		96.761		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		103.514		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
Zn 68 Upper	Zn	68	Zn above linear range - NR
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA3

Sample Description: D9A130190 Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:48:05
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA3.015
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 28
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			65094.320	~~ug/L~~ ug/kg	67025.892
[	Be	9	307.5800	7.00	233.004	ug/L	6.667
|	Al	27	4921046.7652	1.66	96779215.178	ug/L	1632.443
|>	Sc	45			310525.844	ug/L	235949.974
|	V	51	10320.6174	1.63	518588.014	ug/L	2246.782
|	Cr	52	11802.1555	2.61	537104.891	ug/L	10715.459
|	Mn	55	174659.1208	2.95	12303502.264	ug/L	1746.124
|	Fe	57	6595382.8136	1.40	9594340.568	ug/L	24224.333
|	Co	59	8436.1867	2.52	496209.217	ug/L	102.335
|	Ni	60	4656.1218	2.04	59571.856	ug/L	188.420
L	Cu	65	13959.4194	1.16	195996.353	ug/L	219.011
[>	Ge	72			470553.545	ug/L	468461.737
|	Zn	68	161462.3107	1.86	631674.988	ug/L	175.670
|	As	75	259975.4806	4.55	2026577.656	ug/L	-28.758
L	Se	82	743.6779	8.55	524.814	ug/L	1.696
	Y	89			1349964.944	ug/L	311135.844
[	Mo	97	839.6466	2.64	7633.115	ug/L	55.667
|	Ag	107	988.8219	2.19	30733.688	ug/L	43.334
|>	In	115			383653.670	ug/L	374857.936
|	Cd	111	5821.0404	2.08	44658.272	ug/L	15.889
|	Sn	117	619.3989	2.80	4462.409	ug/L	107.001
|	Sb	121	429.0009	1.40	11171.812	ug/L	51.001
L	Ba	135	123923.0159	1.76	668927.404	ug/L	20.000
	Tb	159			254920.073	ug/L	234770.291
[>	Ho	165			227280.430	ug/L	212339.863
|	Tl	205	261.5740	1.90	8465.926	ug/L	152.002
|	Pb	208	162850.9243	1.61	6757828.291	ug/L	171.002
L	U	238	1875.8466	0.53	56561.338	ug/L	17.000

	Bi	209			140184.953	ug/L	125979.854
⌈>	Sc	45			310525.844	ug/L	235949.974
|	Cr	50	57970.3940	17.18	111556.804	ug/L	379.885
L	Cr	53	11197.2582	2.33	63599.943	ug/L	3000.678
⌈	Ni	61	10072.3487	2.16	5322.713	ug/L	1041.715
|	Cu	63	20068.4240	1.83	423706.349	ug/L	414.343
|	Br	79			11537.112	ug/L	505.681
L>	Ge	74			640220.626	ug/L	652160.165
⌈	Ag	109	983.1765	3.25	28796.967	ug/L	41.000
L>	In	115			383653.670	ug/L	374857.936
⌈	Pb	206	157815.0002	0.21	1728684.783	ug/L	42.000
|	Pb	207	156195.9461	0.39	1446658.234	ug/L	38.000
L>	Bi	209			140184.953	ug/L	125979.854
	Hg	200			5350.055	ug/L	17.667
	Pd	106			4917.470	ug/L	195.774
	Kr	83			369.675	ug/L	150.002
	Ti	48			7746051.212	ug/L	-2528.765
	Ca	44			3427259.283	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		131.607		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		100.447		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.346		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		107.036		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		131.607		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.169		
⌈	Ag	109				
⌊>	In	115		102.346		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		111.276		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA3 L

Sample Description: Serial Dilution 5x
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:52:31
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA3 L.016
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 29
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL): 2
Diluted To Volume (mL): 1e+001

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67630.111	~~ug/L~~ mg/kg	67025.892
⌜	Be	9	425.5097	19.39	58.334	ug/L	6.667
|	Al	27	6222227.5266	1.90	20132281.164	ug/L	1632.443
|>	Sc	45			255478.057	ug/L	235949.974
|	V	51	12319.8646	4.71	103697.085	ug/L	2246.782
|	Cr	52	13840.3280	3.20	112476.723	ug/L	10715.459
|	Mn	55	211222.2979	4.88	2448394.496	ug/L	1746.124
|	Fe	57	7450539.5604	3.55	1802763.508	ug/L	24224.333
|	Co	59	10166.9195	3.21	98440.400	ug/L	102.335
|	Ni	60	5544.9763	4.74	11822.087	ug/L	188.420
L	Cu	65	17334.0318	5.50	40205.816	ug/L	219.011
⌜>	Ge	72			470544.943	ug/L	468461.737
|	Zn	68	161172.4304	1.59	126277.277	ug/L	175.670
|	As	75	253457.6276	0.52	394976.004	ug/L	-28.758
L	Se	82	883.1553	29.91	126.427	ug/L	1.696
	Y	89			518969.006	ug/L	311135.844
⌜	Mo	97	855.1482	0.96	1573.102	ug/L	55.667
|	Ag	107	1005.9033	0.91	6180.065	ug/L	43.334
|>	In	115			377034.677	ug/L	374857.936
|	Cd	111	5843.0289	1.44	8826.337	ug/L	15.889
|	Sn	117	622.7649	0.80	968.042	ug/L	107.001
|	Sb	121	465.4146	2.73	2422.563	ug/L	51.001
L	Ba	135	126359.6938 10270	2.04	134095.505	ug/L	20.000
	Tb	159			236318.423	ug/L	234770.291
⌜>	Ho	165			211946.942	ug/L	212339.863
|	Tl	205	264.1180	2.39	1715.454	ug/L	152.002
|	Pb	208	174560.4009	0.64	1351342.849	ug/L	171.002
L	U	238	2002.2913	1.21	11272.892	ug/L	17.000

Report Date/Time: Thursday, February 04, 1999 09:55:11

Sample result < 100 x RL except for Ba

	Bi	209			127512.828	ug/L	125979.854
⌈>	Sc	45			255478.057	ug/L	235949.974
|	Cr	50	68803.7502	14.36	22067.593	ug/L	379.885
L	Cr	53	12953.4355	1.82	14603.607	ug/L	3000.678
⌈	Ni	61	10455.5363	10.20	1949.819	ug/L	1041.715
|	Cu	63	19767.6125	4.22	85318.441	ug/L	414.343
|	Br	79			3526.804	ug/L	505.681
L>	Ge	74			651887.409	ug/L	652160.165
⌈	Ag	109	1004.0297	0.57	5814.575	ug/L	41.000
L>	In	115			377034.677	ug/L	374857.936
⌈	Pb	206	177186.1566	0.77	353118.785	ug/L	42.000
|	Pb	207	175612.1954	2.60	295940.684	ug/L	38.000
L>	Bi	209			127512.828	ug/L	125979.854
	Hg	200			1061.717	ug/L	17.667
	Pd	106			1146.909	ug/L	195.774
	Kr	83			181.336	ug/L	150.002
	Ti	48			1472090.913	ug/L	-2528.765
	Ca	44			707912.141	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		108.276		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		100.445		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		100.581		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		99.815		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		108.276		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		99.958		
⌈	Ag	109				
⌊>	In	115		100.581		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		101.217		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

As 75 Upper	As	75	As above linear range > dilute
Pb 208 Upper	Pb	208	Pb above linear range

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA3 PDS

Sample Description: Post Digestion Spike
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 09:56:58
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA3 PDS.017
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 30
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67682.019	~~ug/L~~ µg/kg	67025.892
[	Be	9	15329.0581	1.64	11558.790	ug/L	6.667
|	Al	27	4940349.8094	1.54	100359130.781	ug/L	1632.443
|>	Sc	45			320836.863	ug/L	235949.974
|	V	51	24384.9214	4.37	1261110.407	ug/L	2246.782
|	Cr	52	25604.0079	3.38	1186163.836	ug/L	10715.459
|	Mn	55	186462.7175	3.53	13568486.570	ug/L	1746.124
|	Fe	57	6574437.9155	3.98	9877468.434	ug/L	24224.333
|	Co	59	22360.5149	3.72	1358074.980	ug/L	102.335
|	Ni	60	18690.8840	3.27	246312.701	ug/L	188.420
L	Cu	65	27153.1625	1.27	393672.943	ug/L	219.011
[>	Ge	72			486023.582	ug/L	468461.737
|	Zn	68	177742.9796	1.49	718054.641	ug/L	175.670
|	As	75	286049.4177	1.56	2302897.690	ug/L	-28.758
L	Se	82	21379.7652	1.74	15537.262	ug/L	1.696
	Y	89			1367179.312	ug/L	311135.844
[	Mo	97	20211.6187	1.15	184766.864	ug/L	55.667
|	Ag	107	19467.5089	2.18	611711.120	ug/L	43.334
|>	In	115			388440.477	ug/L	374857.936
|	Cd	111	25058.5575	1.05	194624.551	ug/L	15.889
|	Sn	117	633.1024	1.97	4617.460	ug/L	107.001
|	Sb	121	19620.6655	2.63	515205.153	ug/L	51.001
L	Ba	135	139165.5929	0.66	760688.725	ug/L	20.000
	Tb	159			259124.771	ug/L	234770.291
[>	Ho	165			230497.748	ug/L	212339.863
|	Tl	205	17790.6234	1.04	572888.886	ug/L	152.002
|	Pb	208	177634.6828	0.43	7476439.604	ug/L	171.002
L	U	238	19840.8054	0.93	606556.447	ug/L	17.000

Spike level = 20,000 µg/kg

	Bi	209			140769.054	ug/L	125979.854
[>	Sc	45			320836.863	ug/L	235949.974
[	Cr	50	71761.0012	5.81	142508.493	ug/L	379.885
[	Cr	53	25853.4895	3.40	146356.653	ug/L	3000.678
[	Ni	61	28573.2796	2.74	13618.296	ug/L	1041.715
[	Cu	63	38909.5631	2.02	846081.029	ug/L	414.343
[	Br	79			11394.337	ug/L	505.681
[>	Ge	74			659981.534	ug/L	652160.165
[	Ag	109	19629.1466	1.78	581381.687	ug/L	41.000
[>	In	115			388440.477	ug/L	374857.936
[	Pb	206	171842.9681	1.18	1889923.139	ug/L	42.000
[	Pb	207	171253.0505	0.97	1592621.963	ug/L	38.000
[>	Bi	209			140769.054	ug/L	125979.854
	Hg	200			5326.047	ug/L	17.667
	Pd	106			5041.185	ug/L	195.774
	Kr	83			351.675	ug/L	150.002
	Ti	48			7810632.690	ug/L	-2528.765
	Ca	44			3511184.025	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		135.977		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		103.749		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		103.623		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		108.551		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		135.977		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.199		
⌈	Ag	109				
⌊>	In	115		103.623		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		111.739		
	Hg	200				
	Pd	106				
	Kr	83				
	Tl	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Sc 45 Int Std for sample	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sample	Sc	45	QC I(nt Std out of limits (30-120%)

> Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA3S

Sample Description: Matrix Spike
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 10:01:25
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA3S.018
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 31
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67866.276	~~ug/L~~ ug/kg	67025.892
⌈	Be	9	14259.8429	4.00	10750.495	ug/L	6.667
|	Al	27	5228205.2431	1.80	106116953.762	ug/L	1632.443
|>	Sc	45			320542.564	ug/L	235949.974
|	V	51	22609.5599	2.38	1168349.665	ug/L	2246.782
|	Cr	52	23803.6292	4.56	1102069.380	ug/L	10715.459
|	Mn	55	188805.7369	2.69	13720180.304	ug/L	1746.124
|	Fe	57	6675778.5089	3.11	10016309.964	ug/L	24224.333
|	Co	59	21335.0352	2.65	1294314.358	ug/L	102.335
|	Ni	60	17638.2554	2.62	232077.344	ug/L	188.420
L	Cu	65	26353.4118	4.12	381425.302	ug/L	219.011
⌈>	Ge	72			485436.873	ug/L	468461.737
|	Zn	68	179632.2923	1.25	724924.112	ug/L	175.670
|	As	75	287966.3749	1.23	2314464.101	ug/L	-28.758
L	Se	82	18483.3323	1.25	13421.641	ug/L	1.696
	Y	89			1366412.099	ug/L	311135.844
⌈	Mo	97	17046.2565	2.66	153060.231	ug/L	55.667
|	Ag	107	11935.6939	3.05	368457.582	ug/L	43.334
|>	In	115			381596.144	ug/L	374857.936
|	Cd	111	23444.3199	1.68	178885.431	ug/L	15.889
|	Sn	117	620.8207	1.57	4449.738	ug/L	107.001
|	Sb	121	2671.8550	2.60	68955.508	ug/L	51.001
L	Ba	135	142787.5828	1.78	766631.295	ug/L	20.000
	Tb	159			256968.532	ug/L	234770.291
⌈>	Ho	165			224551.672	ug/L	212339.863
|	Tl	205	16045.8716	0.18	503464.719	ug/L	152.002
|	Pb	208	183877.3464	0.58	7539975.480	ug/L	171.002
L	U	238	18521.7380	1.02	551644.371	ug/L	17.000

Spike level = 20,000 µg/kg

	Bi	209			140137.432	ug/L	125979.854
⌈>	Sc	45			320542.564	ug/L	235949.974
|	Cr	50	65894.8123	10.11	130540.581	ug/L	379.885
L	Cr	53	24466.0024	2.74	138562.496	ug/L	3000.678
⌈	Ni	61	27733.0722	3.05	13317.006	ug/L	1041.715
|	Cu	63	37158.0540	1.37	812292.098	ug/L	414.343
|	Br	79			12785.196	ug/L	505.681
L>	Ge	74			663146.832	ug/L	652160.165
⌈	Ag	109	11956.5879	1.05	347944.174	ug/L	41.000
L>	In	115			381596.144	ug/L	374857.936
⌈	Pb	206	173562.5636	0.61	1900429.148	ug/L	42.000
|	Pb	207	173208.0322	0.62	1603740.478	ug/L	38.000
L>	Bi	209			140137.432	ug/L	125979.854
	Hg	200			5597.152	ug/L	17.667
	Pd	106			4329.446	ug/L	195.774
	Kr	83			404.010	ug/L	150.002
	Ti	48			7976695.590	ug/L	-2528.765
	Ca	44			3596840.249	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		135.852		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		103.624		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		101.798		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		105.751		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		135.852		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		101.685		
⌈	Ag	109				
⌊>	In	115		101.798		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		111.238		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA3X

Sample Description: Sample Duplicate
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 10:05:52
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA3X.019
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 32
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			67454.980	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	338.2113	3.95	266.672	ug/L	6.667
|	Al	27	5247735.3950	3.34	107729835.881	ug/L	1632.443
|>	Sc	45			324255.362	ug/L	235949.974
|	V	51	9854.9892	2.10	516905.245	ug/L	2246.782
|	Cr	52	11154.7922	2.73	530419.744	ug/L	10715.459
|	Mn	55	171876.0970	0.76	12640145.006	ug/L	1746.124
|	Fe	57	6597099.5280	0.50	10018750.989	ug/L	24224.333
|	Co	59	8313.7428	2.22	510324.841	ug/L	102.335
|	Ni	60	4774.3800	2.18	63740.090	ug/L	188.420
⌊	Cu	65	13893.8158	0.39	203713.054	ug/L	219.011
⌜>	Ge	72			483051.095	ug/L	468461.737
|	Zn	68	161878.4604	0.92	650261.878	ug/L	175.670
|	As	75	267047.1355	6.22	2138108.002	ug/L	-28.758
⌊	Se	82	757.0042	14.71	547.361	ug/L	1.696
	Y	89			1382999.463	ug/L	311135.844
⌜	Mo	97	867.3681	0.63	8025.335	ug/L	55.667
|	Ag	107	994.5534	3.32	31439.876	ug/L	43.334
|>	In	115			390385.358	ug/L	374857.936
|	Cd	111	5880.5337	1.42	45908.446	ug/L	15.889
|	Sn	117	597.8067	2.72	4385.384	ug/L	107.001
|	Sb	121	479.7456	1.60	12705.775	ug/L	51.001
⌊	Ba	135	124413.7054	2.34	683254.227	ug/L	20.000
	Tb	159			256520.158	ug/L	234770.291
⌜>	Ho	165			226896.329	ug/L	212339.863
|	Tl	205	265.0656	0.29	8563.318	ug/L	152.002
|	Pb	208	164996.1670	0.75	6836503.178	ug/L	171.002
⌊	U	238	1879.3437	0.34	56574.041	ug/L	17.000

	Bi	209			137109.591	ug/L	125979.854
⌈>	Sc	45			324255.362	ug/L	235949.974
|	Cr	50	52683.1831	11.90	105654.040	ug/L	379.885
L	Cr	53	10669.3807	2.81	63454.625	ug/L	3000.678
⌈	Ni	61	10663.7440	1.47	5704.530	ug/L	1041.715
|	Cu	63	20406.1617	1.41	440798.785	ug/L	414.343
|	Br	79			12612.037	ug/L	505.681
L>	Ge	74			655154.333	ug/L	652160.165
⌈	Ag	109	1005.3540	1.67	29967.039	ug/L	41.000
L>	In	115			390385.358	ug/L	374857.936
⌈	Pb	206	160142.8271	0.96	1715772.035	ug/L	42.000
|	Pb	207	159404.4185	0.59	1444064.271	ug/L	38.000
L>	Bi	209			137109.591	ug/L	125979.854
	Hg	200			5593.151	ug/L	17.667
	Pd	106			5225.260	ug/L	195.774
	Kr	83			383.676	ug/L	150.002
	Ti	48			8063228.494	ug/L	-2528.765
	Ca	44			3679361.297	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		137.425		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		103.114		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		104.142		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		106.855		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		137.425		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		100.459		
	Ag	109				
>	In	115		104.142		
	Pb	206				
	Pb	207				
>	Bi	209		108.835		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range

Sc 45 Int Std for sample	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sample	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 3

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 10:10:37
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 3.020
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 8
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			65776.747	ug/L	67025.892
⌜	Be	9	97.6325	3.71	5425.418	ug/L	6.667
|	Al	27	110.1943	3.32	166495.306	ug/L	1632.443
|>	Sc	45			236454.529	ug/L	235949.974
|	V *	51	98.4281	2.35	376606.662	ug/L	2246.782
|	Cr	52	99.9917	1.58	347986.956	ug/L	10715.459
|	Mn	55	100.3195	4.02	539375.474	ug/L	1746.124
|	Fe	57	4935.9683	1.73	568940.998	ug/L	24224.333
|	Co	59	98.3043	1.48	440065.522	ug/L	102.335
|	Ni	60	96.6408	2.45	93879.961	ug/L	188.420
⌊	Cu	65	93.1884	6.67	99549.765	ug/L	219.011
⌜>	Ge	72			447947.421	ug/L	468461.737
|	Zn	68	100.2966	2.33	37508.893	ug/L	175.670
|	As	75	103.8058	1.41	76972.542	ug/L	-28.758
⌊	Se	82	102.7572	3.39	6886.460	ug/L	1.696
	Y	89			307637.485	ug/L	311135.844
⌜	Mo	97	102.4955	1.01	88065.909	ug/L	55.667
|	Ag	107	98.8977	4.28	292133.135	ug/L	43.334
|>	In	115			364940.577	ug/L	374857.936
|	Cd	111	99.8323	2.15	72873.014	ug/L	15.889
|	Sn	117	97.8206	1.38	65517.617	ug/L	107.001
|	Sb	121	100.4738	1.25	247836.007	ug/L	51.001
⌊	Ba	135	99.3034	2.11	51023.859	ug/L	20.000
	Tb	159			222947.731	ug/L	234770.291
⌜>	Ho	165			201708.834	ug/L	212339.863
|	Tl	205	97.8662	1.66	275820.696	ug/L	152.002
|	Pb	208	97.6392	2.06	359683.817	ug/L	171.002
⌊	U	238	99.4023	2.61	265838.997	ug/L	17.000

	Bi	209			117980.351	ug/L	125979.854
⌈>	Sc	45			236454.529	ug/L	235949.974
|	Cr	50	99.3700	1.80	14867.815	ug/L	379.885
⌊	Cr	53	98.7334	2.70	43040.519	ug/L	3000.678
⌈	Ni	61	101.5750	3.21	5236.345	ug/L	1041.715
|	Cu	63	103.0914	3.23	212955.840	ug/L	414.343
|	Br	79			1843.472	ug/L	505.681
⌊>	Ge	74			625930.485	ug/L	652160.165
⌈	Ag	109	100.4643	2.61	279673.589	ug/L	41.000
⌊>	In	115			364940.577	ug/L	374857.936
⌈	Pb	206	101.6273	0.74	93724.731	ug/L	42.000
|	Pb	207	101.6207	0.75	79248.003	ug/L	38.000
⌊>	Bi	209			117980.351	ug/L	125979.854
	Hg	200			45.667	ug/L	17.667
	Pd	106			182.260	ug/L	195.774
	Kr	83			154.669	ug/L	150.002
	Ti	48			-149.595	ug/L	-2528.765
	Ca	44			32233.317	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌜	Be	9	97.632			
|	Al	27	110.194			
|>	Sc	45		100.214		
|	V	51	98.428			
|	Cr	52	99.992			
|	Mn	55	100.320			
|	Fe	57	98.719			
|	Co	59	98.304			
|	Ni	60	96.641			
⌊	Cu	65	93.188			
⌜>	Ge	72		95.621		
|	Zn	68	100.297			
|	As	75	103.806			
⌊	Se	82	102.757			
	Y	89				
⌜	Mo	97	102.496			
|	Ag	107	98.898			
|>	In	115		97.354		
|	Cd	111	99.832			
|	Sn	117	97.821			
|	Sb	121	100.474			
⌊	Ba	135	99.303			
	Tb	159				
⌜>	Ho	165		94.993		
|	Tl	205	97.866			
|	Pb	208	97.639			
⌊	U	238	99.402			
	Bi	209				
⌜>	Sc	45		100.214		
|	Cr	50				
⌊	Cr	53				
⌜	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		95.978		
⌜	Ag	109				
⌊>	In	115		97.354		
⌜	Pb	206				
|	Pb	207				
⌊>	Bi	209		93.650		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 10:15:20
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 4.021
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

not used
2-4-99
DAR

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			65657.542	ug/L	67025.892
⌜	Be	9	0.0542	19.91	9.667	ug/L	6.667
|	Al	27	1.2673	8.81	3524.471	ug/L	1632.443
|>	Sc	45			235848.089	ug/L	235949.974
|	V	51	0.1058	36.37	2646.405	ug/L	2246.782
|	Cr	52	0.1193	67.17	11111.766	ug/L	10715.459
|	Mn	55	0.0470	31.18	1997.493	ug/L	1746.124
|	Fe	57	51.8506	8.24	29925.643	ug/L	24224.333
|	Co	59	0.0143	36.29	166.336	ug/L	102.335
|	Ni	60	0.0001	18473.03	188.322	ug/L	188.420
⌊	Cu	65	-0.0369	22.26	179.572	ug/L	219.011
⌜>	Ge	72			445397.320	ug/L	468461.737
|	Zn	68	-0.1492	10.28	111.668	ug/L	175.670
|	As	75	0.0698	90.54	24.497	ug/L	-28.758
⌊	Se	82	-0.0748	175.60	-3.223	ug/L	1.696
	Y	89			301535.642	ug/L	311135.844
⌜	Mo	97	0.1204	17.45	159.002	ug/L	55.667
|	Ag	107	0.0645	27.39	234.671	ug/L	43.334
|>	In	115			368573.662	ug/L	374857.936
|	Cd	111	0.0051	136.24	19.349	ug/L	15.889
|	Sn	117	0.2250	17.11	257.005	ug/L	107.001
|	Sb	121	1.1135	30.58	2819.989	ug/L	51.001
⌊	Ba	135	0.0109	69.86	25.334	ug/L	20.000
	Tb	159			223136.558	ug/L	234770.291
⌜>	Ho	165			201115.735	ug/L	212339.863
|	Tl	205	-0.0192	30.88	90.001	ug/L	152.002
|	Pb	208	0.0172	32.48	225.336	ug/L	171.002
⌊	U	238	0.0306	33.54	98.001	ug/L	17.000

	Bi	209			118505.332	ug/L	125979.854
⌈>	Sc	45			235848.089	ug/L	235949.974
|	Cr	50	-0.6301	39.77	287.910	ug/L	379.885
L	Cr	53	-2.6206	7.04	1938.818	ug/L	3000.678
⌈	Ni	61	2.0298	14.38	1075.385	ug/L	1041.715
|	Cu	63	-0.0304	12.92	332.007	ug/L	414.343
|	Br	79			1059.383	ug/L	505.681
L>	Ge	74			620572.412	ug/L	652160.165
⌈	Ag	109	0.0609	21.01	211.337	ug/L	41.000
L>	In	115			368573.662	ug/L	374857.936
⌈	Pb	206	0.0192	23.21	57.334	ug/L	42.000
|	Pb	207	0.0209	38.43	52.001	ug/L	38.000
L>	Bi	209			118505.332	ug/L	125979.854
	Hg	200			26.000	ug/L	17.667
	Pd	106			201.416	ug/L	195.774
	Kr	83			140.669	ug/L	150.002
	Ti	48			-1764.308	ug/L	-2528.765
	Ca	44			31703.124	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		99.957		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		95.077		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		98.324		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		94.714		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		99.957		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		95.156		
⌈	Ag	109				
⌊>	In	115		98.324		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		94.067		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Fe	57	CCB is out of limits (+/- RL)

QC Std 4	Sb	121	CCB is out of limits (+/- RL)

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: QC Std 4

Sample Description:
Batch ID:
Sample Date/Time: Thursday, February 04, 1999 10:20:52
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\QC Std 4.022
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 1
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			68009.206	ug/L	67025.892
⌜	Be	9	0.0255	272.19	8.000	ug/L	6.667
|	Al	27	1.5557	65.68	3915.618	ug/L	1632.443
|>	Sc	45			235779.261	ug/L	235949.974
|	V	51	0.1022	34.16	2631.427	ug/L	2246.782
|	Cr	52	0.0065	708.11	10727.136	ug/L	10715.459
|	Mn	55	0.0075	304.34	1782.129	ug/L	1746.124
|	Fe	57	47.4494	21.63	29401.432	ug/L	24224.333
|	Co	59	0.0132	46.60	160.336	ug/L	102.335
|	Ni	60	0.0024	690.74	190.917	ug/L	188.420
L	Cu	65	-0.0116	105.71	206.341	ug/L	219.011
⌜>	Ge	72			452412.225	ug/L	468461.737
|	Zn	68	-0.1414	31.68	116.335	ug/L	175.670
|	As	75	-0.0137	376.63	-37.629	ug/L	-28.758
L	Se	82	0.2603	108.63	19.238	ug/L	1.696
	Y	89			304446.867	ug/L	311135.844
⌜	Mo	97	0.0459	42.80	95.335	ug/L	55.667
|	Ag	107	0.0229	1.47	112.335	ug/L	43.334
|>	In	115			372904.054	ug/L	374857.936
|	Cd	111	0.0029	334.07	17.810	ug/L	15.889
|	Sn	117	0.0155	159.97	117.335	ug/L	107.001
|	Sb	121	0.3765	7.21	998.712	ug/L	51.001
L	Ba	135	-0.0036	28.55	18.000	ug/L	20.000
	Tb	159			225857.675	ug/L	234770.291
⌜>	Ho	165			205734.230	ug/L	212339.863
|	Tl	205	-0.0250	10.87	75.334	ug/L	152.002
|	Pb	208	0.0049	81.71	184.002	ug/L	171.002
L	U	238	0.0081	40.07	38.667	ug/L	17.000

	Bi	209			118804.524	ug/L	125979.854
⌈>	Sc	45			235779.261	ug/L	235949.974
⌊	Cr	50	-0.6975	11.75	278.469	ug/L	379.885
⌊	Cr	53	-2.6320	7.96	1932.483	ug/L	3000.678
⌈	Ni	61	0.8352	157.50	1048.049	ug/L	1041.715
⌊	Cu	63	-0.0411	3.10	317.340	ug/L	414.343
⌊	Br	79			753.027	ug/L	505.681
⌊>	Ge	74			634834.863	ug/L	652160.165
⌈	Ag	109	0.0184	13.76	93.001	ug/L	41.000
⌊>	In	115			372904.054	ug/L	374857.936
⌈	Pb	206	0.0151	61.04	53.667	ug/L	42.000
⌊	Pb	207	0.0163	17.91	48.667	ug/L	38.000
⌊>	Bi	209			118804.524	ug/L	125979.854
	Hg	200			30.000	ug/L	17.667
	Pd	106			191.245	ug/L	195.774
	Kr	83			126.002	ug/L	150.002
	Ti	48			-2035.834	ug/L	-2528.765
	Ca	44			31883.527	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		99.928		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		96.574		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		99.479		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		96.889		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		99.928		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		97.343		
⌈	Ag	109				
⌊>	In	115		99.479		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		94.304		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA5

Sample Description: D9A130190 Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 10:25:20
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA5.023
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 33
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66963.117	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	359.6989	6.47	292.006	ug/L	6.667
|	Al	27	5861022.3121	1.44	124135555.380	ug/L	1632.443
|>	Sc	45			334504.299	ug/L	235949.974
|	V	51	10913.3710	2.49	590490.447	ug/L	2246.782
|	Cr	52	12638.8863	2.49	618209.987	ug/L	10715.459
|	Mn	55	171718.4191	2.52	13024266.010	ug/L	1746.124
|	Fe	57	6952089.0591	0.68	10889256.800	ug/L	24224.333
|	Co	59	10934.0765	2.31	692406.696	ug/L	102.335
|	Ni	60	4914.4327	4.18	67674.602	ug/L	188.420
⌞	Cu	65	17087.4137	2.51	258363.467	ug/L	219.011
⌜>	Ge	72			471907.124	ug/L	468461.737
|	Zn	68	128519.9257	1.64	504410.720	ug/L	175.670
|	As	75	206446.4381	2.78	1613872.055	ug/L	-28.758
⌞	Se	82	631.0616	16.88	447.468	ug/L	1.696
	Y	89			1537312.402	ug/L	311135.844
⌜	Mo	97	934.5028	0.74	8558.982	ug/L	55.667
|	Ag	107	799.5273	0.99	25056.877	ug/L	43.334
|>	In	115			386670.537	ug/L	374857.936
|	Cd	111	6446.6399	0.67	49856.957	ug/L	15.889
|	Sn	117	446.1029	0.41	3270.740	ug/L	107.001
|	Sb	121	381.0297	2.40	10007.271	ug/L	51.001
⌞	Ba	135	134602.8240	0.24	732454.390	ug/L	20.000
	Tb	159			256747.312	ug/L	234770.291
⌜>	Ho	165			224941.045	ug/L	212339.863
|	Tl	205	248.7055	1.93	7975.973	ug/L	152.002
|	Pb	208	169380.7066	0.74	6957576.148	ug/L	171.002
⌞	U	238	1691.5263	2.49	50486.611	ug/L	17.000

	Bi	209			133076.639	ug/L	125979.854
⌈>	Sc	45			334504.299	ug/L	235949.974
|	Cr	50	54423.5521	11.09	112780.944	ug/L	379.885
L	Cr	53	12271.0674	2.33	74656.315	ug/L	3000.678
⌈	Ni	61	10943.2069	1.89	5719.202	ug/L	1041.715
|	Cu	63	26092.5772	2.07	553654.583	ug/L	414.343
|	Br	79			13198.910	ug/L	505.681
L>	Ge	74			643305.584	ug/L	652160.165
⌈	Ag	109	805.1297	0.94	23781.349	ug/L	41.000
L>	In	115			386670.537	ug/L	374857.936
⌈	Pb	206	170184.9226	0.38	1769657.161	ug/L	42.000
|	Pb	207	167674.1141	0.82	1474330.982	ug/L	38.000
L>	Bi	209			133076.639	ug/L	125979.854
	Hg	200			6639.609	ug/L	17.667
	Pd	106			5725.532	ug/L	195.774
	Kr	83			409.010	ug/L	150.002
	Ti	48			8715821.011	ug/L	-2528.765
	Ca	44			3249892.439	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		141.769		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		100.735		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		103.151		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Be	135				
	Tb	159				
⌈>	Ho	165		105.934		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		141.769		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		98.642		
⌈	Ag	109				
⌊>	In	115		103.151		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		105.633		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

Dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA6

Sample Description: D9A130190 Soils
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 10:29:49
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA6.024
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 34
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			66647.798	ug/L	67025.892
⌈	Be	9	304.9854	6.80	234.338	ug/L	6.667
|	Al	27	5282083.8051	3.26	105267619.291	ug/L	1632.443
|>	Sc	45			314795.913	ug/L	235949.974
|	V	51	11984.6581	2.76	609744.510	ug/L	2246.782
|	Cr	52	15116.3180	1.62	693051.662	ug/L	10715.459
|	Mn	55	172409.2504	1.45	12309227.423	ug/L	1746.124
|	Fe	57	7096060.3324	1.81	10458061.134	ug/L	24224.333
|	Co	59	10524.4136	2.51	627224.820	ug/L	102.335
|	Ni	60	4938.4176	2.70	64004.770	ug/L	188.420
⌊	Cu	65	13670.5741	1.41	194565.654	ug/L	219.011
⌈>	Ge	72			493710.740	ug/L	468461.737
|	Zn	68	147679.5745	0.31	606251.143	ug/L	175.670
|	As	75	157267.0052	1.74	1285661.433	ug/L	-28.758
⌊	Se	82	602.5059	10.11	446.577	ug/L	1.696
	Y	89			1443726.632	ug/L	311135.844
⌈	Mo	97	974.7406	0.96	8846.160	ug/L	55.667
|	Ag	107	1019.1987	0.68	31643.994	ug/L	43.334
|>	In	115			383233.373	ug/L	374857.936
|	Cd	111	5734.9503	2.13	43961.695	ug/L	15.889
|	Sn	117	665.7699	1.38	4783.849	ug/L	107.001
|	Sb	121	378.3624	1.12	9850.828	ug/L	51.001
⌊	Ba	135	128822.0079	0.75	694739.173	ug/L	20.000
	Tb	159			256217.245	ug/L	234770.291
⌈>	Ho	165			223977.093	ug/L	212339.863
|	Tl	205	247.4319	2.19	7900.930	ug/L	152.002
|	Pb	208	139696.6536	1.24	5713223.790	ug/L	171.002
⌊	U	238	1948.1091	2.13	57883.630	ug/L	17.000

	Bi	209			135268.078	ug/L	125979.854
⌈>	Sc	45			314795.913	ug/L	235949.974
|	Cr	50	54672.4660	11.31	106682.779	ug/L	379.885
L	Cr	53	15094.2901	2.18	85521.165	ug/L	3000.678
⌈	Ni	61	11172.4086	4.52	5932.292	ug/L	1041.715
|	Cu	63	19424.9827	0.84	420211.237	ug/L	414.343
|	Br	79			12873.598	ug/L	505.681
L>	Ge	74			655919.412	ug/L	652160.165
⌈	Ag	109	1027.6374	0.88	30074.930	ug/L	41.000
L>	In	115			383233.373	ug/L	374857.936
⌈	Pb	206	137330.4576	0.29	1451513.264	ug/L	42.000
|	Pb	207	135421.3086	0.90	1210280.793	ug/L	38.000
L>	Bi	209			135268.078	ug/L	125979.854
	Hg	200			9202.722	ug/L	17.667
	Pd	106			5501.939	ug/L	195.774
	Kr	83			396.343	ug/L	150.002
	Ti	48			7583757.651	ug/L	-2528.765
	Ca	44			4308540.424	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
⌈	Be	9				
|	Al	27				
|>	Sc	45		133.416		
|	V	51				
|	Cr	52				
|	Mn	55				
|	Fe	57				
|	Co	59				
|	Ni	60				
⌊	Cu	65				
⌈>	Ge	72		105.390		
|	Zn	68				
|	As	75				
⌊	Se	82				
	Y	89				
⌈	Mo	97				
|	Ag	107				
|>	In	115		102.234		
|	Cd	111				
|	Sn	117				
|	Sb	121				
⌊	Ba	135				
	Tb	159				
⌈>	Ho	165		105.480		
|	Tl	205				
|	Pb	208				
⌊	U	238				
	Bi	209				
⌈>	Sc	45		133.416		
|	Cr	50				
⌊	Cr	53				
⌈	Ni	61				
|	Cu	63				
|	Br	79				
⌊>	Ge	74		100.576		
⌈	Ag	109				
⌊>	In	115		102.234		
⌈	Pb	206				
|	Pb	207				
⌊>	Bi	209		107.373		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range - NR

Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC Int Std out of limits (30-120%)

dilute

Quanterra - Denver Elan 6000 ICPMS 1 Quantitative analysis Report

Sample ID: CPXA7

Sample Description: D9A130190 *Soils*
Batch ID: 9019177
Sample Date/Time: Thursday, February 04, 1999 10:34:18
Method File: c:\elandata\Method\6020_soil.mth
Dataset File: C:\elandata\Dataset\020499\CPXA7.025
Tuning File: q_tune.tun
Optimization File: analog_9k.dac
Autosampler Position: 35
Number of Replicates: 3
Dual Detector Mode: Dual
Initial Sample Quantity (mg): 1e+003
Sample Prep Volume (mL): 1e+002
Aliquot Volume (mL):
Diluted To Volume (mL):

Concentration Results

	Analyte	Mass	Conc. Mean	Conc. RSD	Meas. Intens. Mean	Sample Unit	Blank Intensity
	Li	6			65453.672	~~ug/L~~ ug/kg	67025.892
⌜	Be	9	276.5120	8.89	235.004	ug/L	6.667
|	Al	27	4763234.9875	1.90	104573464.650	ug/L	1632.443
|>	Sc	45			346690.492	ug/L	235949.974
|	V	51	8721.8094	4.28	489745.639	ug/L	2246.782
|	Cr	52	17951.0600	3.95	903639.473	ug/L	10715.459
|	Mn	55	171913.2780	1.16	13518984.221	ug/L	1746.124
|	Fe	57	5899486.1327	0.50	9583643.948	ug/L	24224.333
|	Co	59	10927.2506	0.91	717434.712	ug/L	102.335
|	Ni	60	4605.8898	0.59	65784.391	ug/L	188.420
⌞	Cu	65	10551.1791	0.73	165489.518	ug/L	219.011
⌜>	Ge	72			473547.124	ug/L	468461.737
|	Zn	68	110785.3147	1.93	436290.716	ug/L	175.670
|	As	75	204348.1771	0.72	1602448.345	ug/L	-28.758
⌞	Se	82	607.8033	12.84	432.132	ug/L	1.696
	Y	89			1426641.728	ug/L	311135.844
⌜	Mo	97	1039.3872	1.56	9459.225	ug/L	55.667
|	Ag	107	782.3211	2.15	24376.357	ug/L	43.334
|>	In	115			384534.536	ug/L	374857.936
|	Cd	111	5034.6462	0.26	38727.622	ug/L	15.889
|	Sn	117	311.6106	2.53	2304.542	ug/L	107.001
|	Sb	121	393.6542	1.44	10281.135	ug/L	51.001
⌞	Ba	135	108400.0166	1.00	586548.872	ug/L	20.000
	Tb	159			256004.378	ug/L	234770.291
⌜>	Ho	165			226248.133	ug/L	212339.863
|	Tl	205	253.8571	3.10	8184.427	ug/L	152.002
|	Pb	208	124123.0577	0.09	5128102.640	ug/L	171.002
⌞	U	238	2088.5178	0.47	62687.198	ug/L	17.000

	Bi	209			129411.827	ug/L	125979.854
⌈>	Sc	45			346690.492	ug/L	235949.974
|	Cr	50	61269.3712	7.50	131597.125	ug/L	379.885
L	Cr	53	18230.9488	3.60	112860.255	ug/L	3000.678
⌈	Ni	61	10983.8749	3.39	5621.496	ug/L	1041.715
|	Cu	63	17466.6775	1.09	363158.419	ug/L	414.343
|	Br	79			12429.866	ug/L	505.681
L>	Ge	74			630292.385	ug/L	652160.165
⌈	Ag	109	792.9129	2.67	23286.197	ug/L	41.000
L>	In	115			384534.536	ug/L	374857.936
⌈	Pb	206	128580.8827	0.67	1300185.837	ug/L	42.000
|	Pb	207	126177.8033	0.60	1078841.360	ug/L	38.000
L>	Bi	209			129411.827	ug/L	125979.854
	Hg	200			9690.383	ug/L	17.667
	Pd	106			5534.299	ug/L	195.774
	Kr	83			370.675	ug/L	150.002
	Ti	48			9401147.871	ug/L	-2528.765
	Ca	44			3483815.836	ug/L	37292.986

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery	Dilution % Difference
	Li	6				
	Be	9				
	Al	27				
>	Sc	45		146.934		
	V	51				
	Cr	52				
	Mn	55				
	Fe	57				
	Co	59				
	Ni	60				
	Cu	65				
>	Ge	72		101.086		
	Zn	68				
	As	75				
	Se	82				
	Y	89				
	Mo	97				
	Ag	107				
>	In	115		102.581		
	Cd	111				
	Sn	117				
	Sb	121				
	Ba	135				
	Tb	159				
>	Ho	165		106.550		
	Tl	205				
	Pb	208				
	U	238				
	Bi	209				
>	Sc	45		146.934		
	Cr	50				
	Cr	53				
	Ni	61				
	Cu	63				
	Br	79				
>	Ge	74		96.647		
	Ag	109				
>	In	115		102.581		
	Pb	206				
	Pb	207				
>	Bi	209		102.724		
	Hg	200				
	Pd	106				
	Kr	83				
	Ti	48				
	Ca	44				

QC Out Of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper	Al	27	Al above linear range – NR

Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)
As 75 Upper	As	75	As above linear range
Pb 208 Upper	Pb	208	Pb above linear range
Sc 45 Int Std for sampl	Sc	45	QC I(nt Std out of limits (30-120%)

D; lot