Service Location		
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS	31-MAR-03	A624098
	Complete 04-APR-03	PO Number INTRA
(317)243-8304	Printed 17-APR-03	Sampled 06-MAR-03

Report To	Bill To
SHANNON WILSON HERITAGE ENVIRONMENTAL SERVICES LLC TECHNOLOGY GROUP 7901 WEST MORRIS INDIANAPOLIS, IN 46231	HERB WISSEL HERITAGE ENVIRONMENTAL SERVICES, LLC 7901 WEST MORRIS STREET INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SAMPLE # 1183982
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: GUARDIAN
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 02-APR-03 10:00 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	12.2		Std. Units
ADJUSTED PH	12.1		Std. Units
BUFFER SOLUTION PH	2.93		Std. Units
FINAL PH	11.8		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	24.0		Degrees C
INITIAL TIME	11512.3		Hours
FINAL TIME	11528.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 03-APR-03 16:00 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A624098 SAMPLE # 1183982

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.061	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	5.0	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	0.11	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	70.	0.050	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 03-APR-03 12:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 04-APR-03 14:48 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A624098 SAMPLE # 1183982

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:41 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 22.1 C.
Sample chain of custody number 10945.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.R. Sauce QA

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	31-MAR-03		A6240
	Complete	PO Number	
	07-APR-03	INTRA	
	Printed	Sampled	
	17-APR-03	07-MAR-03	

Report To	Bill To
SHANNON WILSON HERITAGE ENVIRONMENTAL SERVICES LLC TECHNOLOGY GROUP 7901 WEST MORRIS INDIANAPOLIS, IN 46231	HERB WISSEL HERITAGE ENVIRONMENTAL SERVICES, LLC 7901 WEST MORRIS STREET INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SAMPLE # 1183983
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: GUARDIAN
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 02-APR-03 10:00 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	12.3		Std. Units
ADJUSTED PH	12.1		Std. Units
BUFFER SOLUTION PH	2.93		Std. Units
FINAL PH	12.1		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	24.0		Degrees C
INITIAL TIME	11512.3		Hours
FINAL TIME	11528.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 03-APR-03 16:00 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A624099 SAMPLE # 1183983

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.082	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	3.9	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	0.15	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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Parameter	Result	Det. Limit	Units
SELENIUM	72.	0.050	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 03-APR-03 12:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 04-APR-03 14:48 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

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HERITAGE ENVIRONMENTAL SERVICES, LLC **Sample ID: A624099 SAMPLE # 1183983**

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:45 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 22.1 C.
Sample chain of custody number 10945.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.K. Spence QP

CERTIFICATE OF ANALYSIS

Service Location			
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	31-MAR-03		A624100
	Complete 07-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled 07-MAR-03	

Report To	Bill To
SHANNON WILSON HERITAGE ENVIRONMENTAL SERVICES LLC TECHNOLOGY GROUP 7901 WEST MORRIS INDIANAPOLIS, IN 46231	HERB WISSEL HERITAGE ENVIRONMENTAL SERVICES, LLC 7901 WEST MORRIS STREET INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SAMPLE # 1184103
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: GUARDIAN
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 02-APR-03 10:00 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	12.2		Std. Units
ADJUSTED PH	12.2		Std. Units
BUFFER SOLUTION PH	2.93		Std. Units
FINAL PH	11.8		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	24.0		Degrees C
INITIAL TIME	11512.3		Hours
FINAL TIME	11528.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 03-APR-03 16:00 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC

Sample ID: A624100 SAMPLE # 1184103

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M603.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M604.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.062	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M608.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

TCLP CHROMIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M610.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	2.6	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M616.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	0.051	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M622.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L

TCLP SELENIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M628.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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Parameter	Result	Det. Limit	Units
SELENIUM	66.	0.10	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 03-APR-03 12:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 04-APR-03 14:48 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 05-APR-03 08:04 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

HERITAGE ENVIRONMENTAL SERVICES, LLC **Sample ID: A624100 SAMPLE # 1184103**

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 05:42 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 22.1 C.
Sample chain of custody number 10945.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : R.K. Spence QP

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C E R T I F I C A T E O F A N A L Y S I S

Service Location	Received	Project	Lab I
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	31-MAR-03		A62410
	Complete	PO Number	
	07-APR-03	INTRA	
	Printed	Sampled	
	17-APR-03	08-MAR-03	

Report To	Bill To
SHANNON WILSON HERITAGE ENVIRONMENTAL SERVICES LLC TECHNOLOGY GROUP 7901 WEST MORRIS INDIANAPOLIS, IN 46231	HERB WISSEL HERITAGE ENVIRONMENTAL SERVICES, LLC 7901 WEST MORRIS STREET INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SAMPLE # 1184104
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: GUARDIAN
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 02-APR-03 10:00 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	12.1		Std. Units
ADJUSTED PH	12.0		Std. Units
BUFFER SOLUTION PH	2.93		Std. Units
FINAL PH	10.4		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	24.0		Degrees C
INITIAL TIME	11512.3		Hours
FINAL TIME	11528.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 03-APR-03 16:00 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	BDL	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	2.5	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	120	0.050	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 03-APR-03 12:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 04-APR-03 14:48 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A624101 SAMPLE # 1184104

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:49 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 22.1 C.
Sample chain of custody number 10945.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.R. Spence

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Service Location	Received	Project	Lab I
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	31-MAR-03		A6241
	Complete 07-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled 06-MAR-03	

Report To

SHANNON WILSON
HERITAGE ENVIRONMENTAL SERVICES LLC
TECHNOLOGY GROUP
7901 WEST MORRIS
INDIANAPOLIS, IN 46231

Bill To

HERB WISSEL
HERITAGE ENVIRONMENTAL SERVICES, LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SAMPLE # 1184340
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: GUARDIAN
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 02-APR-03 10:00 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	12.3		Std. Units
ADJUSTED PH	12.1		Std. Units
BUFFER SOLUTION PH	2.93		Std. Units
FINAL PH	12.0		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	24.0		Degrees C
INITIAL TIME	11512.3		Hours
FINAL TIME	11528.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 03-APR-03 16:00 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC

Sample ID: A624102 SAMPLE # 1184340

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M603.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M604.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.076	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M608.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

TCLP CHROMIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M610.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	3.7	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M616.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	0.13	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M622.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L

TCLP SELENIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M628.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	68.	0.050	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 03-APR-03 12:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 04-APR-03 14:48 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	0.055	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A624102 SAMPLE # 1184340

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 04-APR-03 06:53 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 22.1 C.
Sample chain of custody number 10945.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : R.K. Spence QAO

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QUALITY ASSURANCE REPORT

Service Location
Heritage Environmental Services, LLC
Commercial Laboratory Operations
7901 West Morris Street
Indianapolis, IN 46231
(317) 243-8304

Report Date : 18-Apr-03

Submitter
SHANNON WILSON
HERITAGE ENVIRONMENTAL SERVICES LLC
TECHNOLOGY GROUP
INDIANAPOLIS, IN 46231

Client ID	Lab Sample ID	Date/Time Sampled	Date Received	Date Complete
SAMPLE # 1183982....	A624098	06-Mar-03	31-Mar-03	04-Apr-03
		DESCRIPTION GUARDIAN		
SAMPLE # 1183983....	A624099	07-Mar-03	31-Mar-03	07-Apr-03
		DESCRIPTION GUARDIAN		
SAMPLE # 1184103....	A624100	07-Mar-03	31-Mar-03	07-Apr-03
		DESCRIPTION GUARDIAN		
SAMPLE # 1184104....	A624101	08-Mar-03	31-Mar-03	07-Apr-03
		DESCRIPTION GUARDIAN		
SAMPLE # 1184340....	A624102	06-Mar-03	31-Mar-03	07-Apr-03
		DESCRIPTION GUARDIAN		

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HERITAGE ENVIRONMENTAL SERVICES, LLC

TCLP ANTIMONY ICP SW846-6010B **M602.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	ANTIMONY	1			1.03	mg/L	103	
CDL01	Q1484348	PERKIN ELM	ANTIMONY	0.120			0.121	mg/L	100.8	
ICS-A	Q1484351	PERKIN ELM	ANTIMONY	0.6			0.642	mg/L	107	
CCV	Q1484376	INORGANIC	ANTIMONY	1			1.06	mg/L	106	
BLA01	Q1484377	NA	ANTIMONY			<	0.00400	mg/L		
BLA02	Q1484126	NA	ANTIMONY			<	0.00400	mg/L		
LCS	Q1484127	SPEX	ANTIMONY	0.5			0.556	mg/L	111.2	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	ANTIMONY	0			0.0539	mg/L		200
SPI02	Q1484128	A624100	ANTIMONY	0	1		1.18	mg/L	118	
SPI03	Q1484130	A624100	ANTIMONY	0	4		4.30	mg/L	107.5	
DPS03	Q1484131	A624100	ANTIMONY	0	4		4.33	mg/L	108.3	0.7
DUP03	Q1479574	A624081	ANTIMONY	0.123			0.136	mg/L		10
CCV	Q1484378	INORGANIC	ANTIMONY	1			1.05	mg/L	105	
BLA01	Q1484379	NA	ANTIMONY			<	0.00400	mg/L		
BLA03	Q1479572	NA	ANTIMONY			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	ANTIMONY	1			1.05	mg/L	105	
BLA01	Q1484381	NA	ANTIMONY			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	ANTIMONY	0.120			0.124	mg/L	103.3	
ICS-A	Q1484386	PERKIN ELM	ANTIMONY	0.6			0.655	mg/L	109.2	

Qualifiers
< Less Than Lower Detection Limit

TCLP ARSENIC ICP SW846-6010B **M603.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							

HERITAGE ENVIRONMENTAL SERVICES, LLC

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	ARSENIC	1			0.988	mg/L	98.8	
CDL01	Q1484349	INORGANIC	ARSENIC	10			10.3	mg/L	103	
ICS-A	Q1484351	PERKIN ELM	ARSENIC	0.1			0.0986	mg/L	98.6	
CCV	Q1484376	INORGANIC	ARSENIC	5			5.11	mg/L	102.2	
BLA01	Q1484377	NA	ARSENIC				0.00480	mg/L		
BLA02	Q1484126	NA	ARSENIC			<	0.00400	mg/L		
LCS	Q1484127	SPEX	ARSENIC	2			2.08	mg/L	104	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	ARSENIC	0		BDL		mg/L		
SPI02	Q1484128	A624100	ARSENIC	0	4		4.27	mg/L	106.8	
SPI03	Q1484130	A624100	ARSENIC	0	4		4.27	mg/L	106.8	
DPS03	Q1484131	A624100	ARSENIC	0	4		4.33	mg/L	108.3	1.4
DUP03	Q1479574	A624081	ARSENIC	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	ARSENIC	5			5.10	mg/L	102	
BLA01	Q1484379	NA	ARSENIC			<	0.00400	mg/L		
BLA03	Q1479572	NA	ARSENIC			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	ARSENIC	5			5.12	mg/L	102.4	
BLA01	Q1484381	NA	ARSENIC			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	ARSENIC	0.02			0.0182	mg/L	91	
ICS-A	Q1484386	PERKIN ELM	ARSENIC	0.1			0.0988	mg/L	98.8	

Qualifiers

< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP BARIUM ICP SW846-6010B **M604.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							

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QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484344	PERKIN ELM	BARIUM	1			1.04	mg/L	104	
CDL01	Q1484349	INORGANIC	BARIUM	10			10.4	mg/L	104	
ICS-A	Q1484351	PERKIN ELM	BARIUM	0.500			0.532	mg/L	106.4	
CCV	Q1484376	INORGANIC	BARIUM	5.00			5.11	mg/L	102.2	
BLA01	Q1484377	NA	BARIUM			<	0.00400	mg/L		
BLA02	Q1484126	NA	BARIUM			<	0.00400	mg/L		
LCS	Q1484127	SPEX	BARIUM	2			2.17	mg/L	108.5	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	BARIUM	0.0618			0.0626	mg/L		1.3
SPI02	Q1484128	A624100	BARIUM	0.0618	4		4.28	mg/L	105.5	
SPI03	Q1484130	A624100	BARIUM	0.0618	1		1.09	mg/L	102.8	
DPS03	Q1484131	A624100	BARIUM	0.0618	1		1.12	mg/L	105.8	2.9
DUP03	Q1479574	A624081	BARIUM	2.48			2.50	mg/L		0.8
CCV	Q1484378	INORGANIC	BARIUM	5.00			5.10	mg/L	102	
BLA01	Q1484379	NA	BARIUM			<	0.00400	mg/L		
BLA03	Q1479572	NA	BARIUM				0.00464	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	BARIUM	5.00			5.11	mg/L	102.2	
BLA01	Q1484381	NA	BARIUM			<	0.00400	mg/L		
ICS-A	Q1484386	PERKIN ELM	BARIUM	0.500			0.536	mg/L	107.2	

Qualifiers

< Less Than Lower Detection Limit

TCLP BERYLLIUM ICP SW846-6010B **M605.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	BERYLLIUM	1			1.04	mg/L	104	
CDL01	Q1484349	INORGANIC	BERYLLIUM	10			10.3	mg/L	103	
ICS-A	Q1484351	PERKIN ELM	BERYLLIUM	0.500			0.531	mg/L	106.2	
CCV	Q1484376	INORGANIC	BERYLLIUM	5.00			5.18	mg/L	103.6	
BLA01	Q1484377	NA	BERYLLIUM			<	0.00160	mg/L		
BLA02	Q1484126	NA	BERYLLIUM			<	0.00160	mg/L		
LCS	Q1484127	SPEX	BERYLLIUM	0.05			0.0540	mg/L	108	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	BERYLLIUM	0		BDL		mg/L		
SPI02	Q1484128	A624100	BERYLLIUM	0	0.1		0.107	mg/L	107	
SPI03	Q1484130	A624100	BERYLLIUM	0	2		2.07	mg/L	103.5	
DPS03	Q1484131	A624100	BERYLLIUM	0	2		2.12	mg/L	106	2.4
DUP03	Q1479574	A624081	BERYLLIUM	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	BERYLLIUM	5.00			5.17	mg/L	103.4	
BLA01	Q1484379	NA	BERYLLIUM			<	0.00160	mg/L		
BLA03	Q1479572	NA	BERYLLIUM			<	0.00160	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	BERYLLIUM	5.00			5.21	mg/L	104.2	
BLA01	Q1484381	NA	BERYLLIUM			<	0.00160	mg/L		
CDL01	Q1484384	PERKIN ELM	BERYLLIUM	0.010			0.0106	mg/L	106	
ICS-A	Q1484386	PERKIN ELM	BERYLLIUM	0.500			0.549	mg/L	109.8	

Qualifiers

< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP CADMIUM ICP SW846-6010B **M608.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	CADMIUM	1			1.05	mg/L	105	
CDL01	Q1484349	INORGANIC	CADMIUM	10			10.3	mg/L	103	

TCLP CADMIUM ICP SW846-6010B **M608.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICS-A	Q1484351	PERKIN ELM	CADMIUM	1.00			1.09	mg/L	109	
CCV	Q1484376	INORGANIC	CADMIUM	5.00			5.10	mg/L	102	
BLA01	Q1484377	NA	CADMIUM			<	0.00200	mg/L		
BLA02	Q1484126	NA	CADMIUM			<	0.00200	mg/L		
LCS	Q1484127	SPEX	CADMIUM	0.05			0.0536	mg/L	107.2	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	CADMIUM	0		BDL		mg/L		
SPI02	Q1484128	A624100	CADMIUM	0	0.1		0.108	mg/L	108	
SPI03	Q1484130	A624100	CADMIUM	0	0.2		0.210	mg/L	105	
DPS03	Q1484131	A624100	CADMIUM	0	0.2		0.214	mg/L	107	1.9
DUP03	Q1479574	A624081	CADMIUM	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	CADMIUM	5.00			5.09	mg/L	101.8	
BLA01	Q1484379	NA	CADMIUM			<	0.00200	mg/L		
BLA03	Q1479572	NA	CADMIUM			<	0.00200	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	CADMIUM	5.00			5.16	mg/L	103.2	
BLA01	Q1484381	NA	CADMIUM			<	0.00200	mg/L		
CDL01	Q1484384	PERKIN ELM	CADMIUM	0.010			0.0105	mg/L	105	
ICS-A	Q1484386	PERKIN ELM	CADMIUM	1.00			1.11	mg/L	111	

Qualifiers
< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP CHROMIUM ICP SW846-6010B **M610.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	CHROMIUM	1			1.05	mg/L	105	
CDL01	Q1484349	INORGANIC	CHROMIUM	10			10.4	mg/L	104	

TCLP CHROMIUM ICP SW846-6010B **M610.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICS-A	Q1484351	PERKIN ELM	CHROMIUM	0.500			0.514	mg/L	102.8	
CCV	Q1484376	INORGANIC	CHROMIUM	5.00			5.08	mg/L	101.6	
BLA01	Q1484377	NA	CHROMIUM			<	0.00400	mg/L		
BLA02	Q1484126	NA	CHROMIUM			<	0.00400	mg/L		
LCS	Q1484127	SPEX	CHROMIUM	0.2			0.214	mg/L	107	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	CHROMIUM	2.61			2.62	mg/L		0.4
SPI02	Q1484128	A624100	CHROMIUM	2.61	0.4		3.07	mg/L	115	
SPI03	Q1484130	A624100	CHROMIUM	2.61	0.4		2.95	mg/L	85	
DPS03	Q1484131	A624100	CHROMIUM	2.61	0.4		3.01	mg/L	100	16.2
DUP03	Q1479574	A624081	CHROMIUM	0.124			0.120	mg/L		3.3
CCV	Q1484378	INORGANIC	CHROMIUM	5.00			5.06	mg/L	101.2	
BLA01	Q1484379	NA	CHROMIUM			<	0.00400	mg/L		
BLA03	Q1479572	NA	CHROMIUM			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	CHROMIUM	5.00			5.11	mg/L	102.2	
BLA01	Q1484381	NA	CHROMIUM			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	CHROMIUM	0.020			0.0215	mg/L	107.5	
ICS-A	Q1484386	PERKIN ELM	CHROMIUM	0.500			0.523	mg/L	104.6	

Qualifiers
< Less Than Lower Detection Limit

TCLP LEAD ICP SW846-6010B **M616.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	LEAD	1			1.05	mg/L	105	
CDL01	Q1484349	INORGANIC	LEAD	10			10.4	mg/L	104	
ICS-A	Q1484351	PERKIN ELM	LEAD	1.00			1.00	mg/L	100	

TCLP LEAD ICP SW846-6010B **M616.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
CCV	Q1484376	INORGANIC	LEAD	5.00			5.09	mg/L	101.8	
BLA01	Q1484377	NA	LEAD			<	0.00400	mg/L		
BLA02	Q1484126	NA	LEAD			<	0.00400	mg/L		
LCS	Q1484127	SPEX	LEAD	0.5			0.537	mg/L	107.4	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	LEAD	0.0509			0.0516	mg/L		1.4
SPI02	Q1484128	A624100	LEAD	0.0509	1		1.10	mg/L	104.9	
SPI03	Q1484130	A624100	LEAD	0.0509	2		2.04	mg/L	99.5	
DPS03	Q1484131	A624100	LEAD	0.0509	2		2.10	mg/L	102.5	3
DUP03	Q1479574	A624081	LEAD	0.481			1.18	mg/L		84.2
CCV	Q1484378	INORGANIC	LEAD	5.00			5.09	mg/L	101.8	
BLA01	Q1484379	NA	LEAD			<	0.00400	mg/L		
BLA03	Q1479572	NA	LEAD			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	LEAD	5.00			5.14	mg/L	102.8	
BLA01	Q1484381	NA	LEAD			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	LEAD	0.100			0.106	mg/L	106	
ICS-A	Q1484386	PERKIN ELM	LEAD	1.00			1.01	mg/L	101	

Qualifiers
< Less Than Lower Detection Limit

TCLP MERCURY CVAA SW846-7470A **M620.4**
Prep : MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A

R450722 Analyst: D THOMPSON Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: S O'NEAL Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
LCS	Q1484120		Analytical Run: R450792							
BLA02	Q1484121		Analytical Run: R450792							
SPI02	Q1484122	A624006	Analytical Run: R450792							
DPS02	Q1484123	A624006	Analytical Run: R450792							
SAMPLE	A624098	Rep: 0	Analytical Run: R450792							
SAMPLE	A624099	Rep: 0	Analytical Run: R450792							
SAMPLE	A624100	Rep: 0	Analytical Run: R450792							
SPI03	Q1484124	A624100	Analytical Run: R450792							
DPS03	Q1484125	A624100	Analytical Run: R450792							
SAMPLE	A624101	Rep: 0	Analytical Run: R450792							
SAMPLE	A624102	Rep: 0	Analytical Run: R450792							
BLA03	Q1479572	NA	Analytical Run: R450792							

R450792 Analyst: D DRABENSTOTT Run Date: 04-Apr-03 Instrument: CVAA
Analytical Reviewer: S O'NEAL Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484615		MERCURY	0.002			0.00208	mg/L	104	
CDL01	Q1484619		MERCURY	0.0002			0.00021	mg/L	105	
LCS	Q1484120		MERCURY	0.002			0.00207	mg/L	103.5	
BLA02	Q1484121		MERCURY			<	0.00008	mg/L		
SPI02	Q1484122	A624006	MERCURY	0	0.01		0.0099	mg/L	99	

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TCLP MERCURY CVAA SW846-7470A M620.4 (cont.)
Prep : MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A

R450792 Analyst: D DRABENSTOTT Run Date: 04-Apr-03 Instrument: CVAA (cont.)
Analytical Reviewer: S O'NEAL Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
DPS02	Q1484123	A624006	MERCURY	0	0.01		0.01	mg/L	100	1
CCV	Q1484620		MERCURY	0.003			0.00302	mg/L	100.7	
BLA01	Q1484621		MERCURY			<	0.00008	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
CCV	Q1484622		MERCURY	0.003			0.00299	mg/L	99.7	
BLA01	Q1484623		MERCURY			<	0.00008	mg/L		
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
BLA03	Q1479572	NA	MERCURY			<	0.0008	mg/L		
CCV	Q1484624		MERCURY	0.003			0.00306	mg/L	102	
BLA01	Q1484625		MERCURY			<	0.00008	mg/L		
SPI03	Q1484124	A624100	MERCURY	0	0.02		0.0186	mg/L	93	
DPS03	Q1484125	A624100	MERCURY	0	0.02		0.0161	mg/L	80.5	14.4
CDL01	Q1484626		MERCURY	0.0002			0.00018	mg/L	90	

Qualifiers
< Less Than Lower Detection Limit

TCLP NICKEL ICP SW846-6010B M622.8
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	NICKEL	1			1.06	mg/L	106	
CDL01	Q1484349	INORGANIC	NICKEL	10			10.4	mg/L	104	
ICS-A	Q1484351	PERKIN ELM	NICKEL	1.00			0.972	mg/L	97.2	
CCV	Q1484376	INORGANIC	NICKEL	5.00			5.12	mg/L	102.4	
BLA01	Q1484377	NA	NICKEL			<	0.00200	mg/L		
BLA02	Q1484126	NA	NICKEL			<	0.00200	mg/L		
LCS	Q1484127	SPEX	NICKEL	0.5			0.535	mg/L	107	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	NICKEL	0		BDL		mg/L		

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TCLP NICKEL ICP SW846-6010B **M622.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
SPI02	Q1484128	A624100	NICKEL	0	1		1.03	mg/L	103	
SPI03	Q1484130	A624100	NICKEL	0	0.2		0.192	mg/L	96	
DPS03	Q1484131	A624100	NICKEL	0	0.2		0.201	mg/L	100.5	4.6
DUP03	Q1479574	A624081	NICKEL	0.395			0.405	mg/L		2.5
CCV	Q1484378	INORGANIC	NICKEL	5.00			5.11	mg/L	102.2	
BLA01	Q1484379	NA	NICKEL			<	0.00200	mg/L		
BLA03	Q1479572	NA	NICKEL			<	0.00200	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	NICKEL	5.00			5.16	mg/L	103.2	
BLA01	Q1484381	NA	NICKEL			<	0.00200	mg/L		
CDL01	Q1484384	PERKIN ELM	NICKEL	0.080			0.0863	mg/L	107.9	
ICS-A	Q1484386	PERKIN ELM	NICKEL	1.00			0.991	mg/L	99.1	

Qualifiers

< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP SELENIUM ICP SW846-6010B **M628.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	SELENIUM	1			1.02	mg/L	102	
CDL01	Q1484349	INORGANIC	SELENIUM	10			10.3	mg/L	103	
ICS-A	Q1484351	PERKIN ELM	SELENIUM	0.05			0.067	mg/L	134	
CCV	Q1484376	INORGANIC	SELENIUM	5			5.19	mg/L	103.8	
BLA01	Q1484377	NA	SELENIUM				0.00912	mg/L		
BLA02	Q1484126	NA	SELENIUM			<	0.00400	mg/L		
LCS	Q1484127	SPEX	SELENIUM	2			2.17	mg/L	108.5	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	SELENIUM	65.7			65.6	mg/L		0.2

TCLP SELENIUM ICP SW846-6010B **M628.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
SPI02	Q1484128	A624100	SELENIUM	65.7	4	NQR	72.4	mg/L		
SPI03	Q1484130	A624100	SELENIUM	65.7	1	NQR	65	mg/L		
DPS03	Q1484131	A624100	SELENIUM	65.7	1	NQR	66.2	mg/L		
DUP03	Q1479574	A624081	SELENIUM	0.124			0.0765	mg/L		47.4
CCV	Q1484378	INORGANIC	SELENIUM	5			5.18	mg/L	103.6	
BLA01	Q1484379	NA	SELENIUM				0.0154	mg/L		
BLA03	Q1479572	NA	SELENIUM				0.0253	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	SELENIUM	5			5.22	mg/L	104.4	
BLA01	Q1484381	NA	SELENIUM				0.021	mg/L		
CDL01	Q1484384	PERKIN ELM	SELENIUM	0.01			0.0169	mg/L	169	
ICS-A	Q1484386	PERKIN ELM	SELENIUM	0.05			0.0508	mg/L	101.6	

Qualifiers
< Less Than Lower Detection Limit
NQR No QC Result. High Sample Concentration.

TCLP SILVER ICP SW846-6010B **M630.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484344	PERKIN ELM	SILVER	0.5			0.492	mg/L	98.4	
CDL01	Q1484349	INORGANIC	SILVER	2			2.04	mg/L	102	
ICS-A	Q1484351	PERKIN ELM	SILVER	0.2			0.223	mg/L	111.5	
CCV	Q1484376	INORGANIC	SILVER	1.00			1.01	mg/L	101	
BLA01	Q1484377	NA	SILVER			<	0.00400	mg/L		
BLA02	Q1484126	NA	SILVER			<	0.00400	mg/L		
LCS	Q1484127	SPEX	SILVER	0.05			0.0590	mg/L	118	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	SILVER	0		BDL		mg/L		

TCLP SILVER ICP SW846-6010B **M630.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
SPI02	Q1484128	A624100	SILVER	0	0.1		0.116	mg/L	116	
SPI03	Q1484130	A624100	SILVER	0	0.2		0.199	mg/L	99.5	
DPS03	Q1484131	A624100	SILVER	0	0.2		0.207	mg/L	103.5	3.9
DUP03	Q1479574	A624081	SILVER	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	SILVER	1.00			1.01	mg/L	101	
BLA01	Q1484379	NA	SILVER			<	0.00400	mg/L		
BLA03	Q1479572	NA	SILVER			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	SILVER	1.00			1.02	mg/L	102	
BLA01	Q1484381	NA	SILVER			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	SILVER	0.020			0.0206	mg/L	103	
ICS-A	Q1484386	PERKIN ELM	SILVER	0.2			0.228	mg/L	114	

Qualifiers
< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP THALLIUM ICP SW846-6010B **M634.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450837							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	THALLIUM	1			1.04	mg/L	104	
CDL01	Q1484349	INORGANIC	THALLIUM	10			10.3	mg/L	103	
ICS-A	Q1484351	PERKIN ELM	THALLIUM	0.1			0.0888	mg/L	88.8	
BLA02	Q1484126	NA	THALLIUM				0.0212	mg/L		
LCS	Q1484127	SPEX	THALLIUM	3			3.00	mg/L	100	
DUP02	Q1484129	A624100	THALLIUM	0		BDL		mg/L		
SPI02	Q1484128	A624100	THALLIUM	0	6		5.48	mg/L	91.3	
SPI03	Q1484130	A624100	THALLIUM	0	2		1.8	mg/L	90	
DPS03	Q1484131	A624100	THALLIUM	0	2		1.83	mg/L	91.5	1.7

TCLP THALLIUM ICP SW846-6010B **M634.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
DUP03	Q1479574	A624081	THALLIUM	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	THALLIUM	5			4.81	mg/L	96.2	
BLA01	Q1484379	NA	THALLIUM				0.0335	mg/L		
BLA03	Q1479572	NA	THALLIUM				0.019	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	THALLIUM	5			4.86	mg/L	97.2	
BLA01	Q1484381	NA	THALLIUM				0.024	mg/L		
CDL01	Q1484384	PERKIN ELM	THALLIUM	0.02			0.0276	mg/L	138	
ICS-A	Q1484386	PERKIN ELM	THALLIUM	0.1			0.0929	mg/L	92.9	

R450837 Analyst: J KRAMER Run Date: 04-Apr-03 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 07-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484775	PERKIN ELM	THALLIUM	1			1.03	mg/L	103	
CDL01	Q1484781	INORGANIC	THALLIUM	10			10.2	mg/L	102	
ICS-A	Q1484783	PERKIN ELM	THALLIUM	0.1			0.0868	mg/L	86.8	
CCV	Q1484818	INORGANIC	THALLIUM	5			4.65	mg/L	93	
BLA01	Q1484819	NA	THALLIUM				0.0694	mg/L		
BLA02	Q1484126	NA	THALLIUM				0.0212	mg/L		
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
CCV	Q1484820	INORGANIC	THALLIUM	5			4.80	mg/L	96	
BLA01	Q1484821	NA	THALLIUM				0.0582	mg/L		
CDL01	Q1484826	PERKIN ELM	THALLIUM	0.02			0.0264	mg/L	132	
ICS-A	Q1484828	PERKIN ELM	THALLIUM	0.1			0.0864	mg/L	86.4	

Qualifiers
BDL Below Detection Limit

TCLP VANADIUM ICP SW846-6010B **M638.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723 Analyst: L SMITH Run Date: 03-Apr-03 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

HERITAGE ENVIRONMENTAL SERVICES, LLC

R450759	Analyst: J KRAMER	Run Date: 03-Apr-03	Instrument: ICP
Analytical	Reviewer: S ENDERSEN	Review Date: 04-Apr-03	

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
ICV01	Q1484343	PERKIN ELM	VANADIUM	1			1.06	mg/L	106	
CDL01	Q1484349	INORGANIC	VANADIUM	10			10.5	mg/L	105	
ICS-A	Q1484351	PERKIN ELM	VANADIUM	0.500			0.530	mg/L	106	
CCV	Q1484376	INORGANIC	VANADIUM	5.00			5.22	mg/L	104.4	
BLA01	Q1484377	NA	VANADIUM			<	0.00400	mg/L		
BLA02	Q1484126	NA	VANADIUM			<	0.00400	mg/L		
LCS	Q1484127	SPEX	VANADIUM	0.5			0.542	mg/L	108.4	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	VANADIUM	0		BDL		mg/L		
SPI02	Q1484128	A624100	VANADIUM	0	1		1.07	mg/L	107	
SPI03	Q1484130	A624100	VANADIUM	0	4		4.15	mg/L	103.8	
DPS03	Q1484131	A624100	VANADIUM	0	4		4.23	mg/L	105.8	1.9
DUP03	Q1479574	A624081	VANADIUM	0		BDL		mg/L		
CCV	Q1484378	INORGANIC	VANADIUM	5.00			5.21	mg/L	104.2	
BLA01	Q1484379	NA	VANADIUM			<	0.00400	mg/L		
BLA03	Q1479572	NA	VANADIUM			<	0.00400	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	VANADIUM	5.00			5.24	mg/L	104.8	
BLA01	Q1484381	NA	VANADIUM			<	0.00400	mg/L		
CDL01	Q1484384	PERKIN ELM	VANADIUM	0.100			0.108	mg/L	108	
ICS-A	Q1484386	PERKIN ELM	VANADIUM	0.500			0.541	mg/L	108.2	

Qualifiers

< Less Than Lower Detection Limit
BDL Below Detection Limit

TCLP ZINC ICP SW846-6010B **M639.8**
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450723	Analyst: L SMITH	Run Date: 03-Apr-03	Instrument: PREP
Prep	Reviewer: W WATNESS	Review Date: 04-Apr-03	

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
BLA02	Q1484126	NA	Analytical Run: R450759							
LCS	Q1484127	SPEX	Analytical Run: R450759							
SPI02	Q1484128	A624100	Analytical Run: R450759							
DUP02	Q1484129	A624100	Analytical Run: R450759							
SPI03	Q1484130	A624100	Analytical Run: R450759							
DPS03	Q1484131	A624100	Analytical Run: R450759							
DUP03	Q1479574	A624081	Analytical Run: R450759							
SAMPLE	A624098	Rep: 0	Analytical Run: R450759							
SAMPLE	A624099	Rep: 0	Analytical Run: R450759							
SAMPLE	A624100	Rep: 0	Analytical Run: R450759							
SAMPLE	A624101	Rep: 0	Analytical Run: R450759							
SAMPLE	A624102	Rep: 0	Analytical Run: R450759							
BLA03	Q1479572	NA	Analytical Run: R450759							

R450759	Analyst: J KRAMER	Run Date: 03-Apr-03	Instrument: ICP
Analytical	Reviewer: S ENDERSEN	Review Date: 04-Apr-03	

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	R
ICV01	Q1484343	PERKIN ELM	ZINC	1			1.04	mg/L	104	
CDL01	Q1484349	INORGANIC	ZINC	10			10.3	mg/L	103	
ICS-A	Q1484351	PERKIN ELM	ZINC	1.00			0.983	mg/L	98.3	

HERITAGE ENVIRONMENTAL SERVICES, LLC

TCLP ZINC ICP SW846-6010B **M639.8** (cont.)
Prep : FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

R450759 Analyst: J KRAMER Run Date: 03-Apr-03 Instrument: ICP (cont.)
Analytical Reviewer: S ENDERSEN Review Date: 04-Apr-03

QCType	Lab ID	Source	Parameter	True/Sampl	Spike Val	RQL	Observed	Units	% Rec	RPD
CCV	Q1484376	INORGANIC	ZINC	5.00			4.98	mg/L	99.6	
BLA01	Q1484377	NA	ZINC			<	0.00800	mg/L		
BLA02	Q1484126	NA	ZINC			<	0.00800	mg/L		
LCS	Q1484127	SPEX	ZINC	0.5			0.536	mg/L	107.2	
SAMPLE	A624100		See Certificate of Analysis, Rep: 0							
DUP02	Q1484129	A624100	ZINC	0		BDL		mg/L		
SPI02	Q1484128	A624100	ZINC	0	1		1.04	mg/L	104	
SPI03	Q1484130	A624100	ZINC	0	0.2		0.224	mg/L	112	
DPS03	Q1484131	A624100	ZINC	0	0.2		0.238	mg/L	119	6.1
DUP03	Q1479574	A624081	ZINC	743.			766.	mg/L		3
CCV	Q1484378	INORGANIC	ZINC	5.00			4.99	mg/L	99.8	
BLA01	Q1484379	NA	ZINC			<	0.00800	mg/L		
BLA03	Q1479572	NA	ZINC				0.0158	mg/L		
SAMPLE	A624098		See Certificate of Analysis, Rep: 0							
SAMPLE	A624099		See Certificate of Analysis, Rep: 0							
SAMPLE	A624101		See Certificate of Analysis, Rep: 0							
SAMPLE	A624102		See Certificate of Analysis, Rep: 0							
CCV	Q1484380	INORGANIC	ZINC	5.00			5.14	mg/L	102.8	
BLA01	Q1484381	NA	ZINC			<	0.00800	mg/L		
CDL01	Q1484384	PERKIN ELMZINC		0.040			0.0414	mg/L	103.5	
ICS-A	Q1484386	PERKIN ELMZINC		1.00			1.00	mg/L	100	

Qualifiers
< Less Than Lower Detection Limit
BDL Below Detection Limit

Approved : PK Spence QAP

18-Apr-03 10:04 PKS0718.1 Last Page B14

HERITAGE ENVIRONMENTAL SERVICES, LLC

7901 West Morris Street
Indianapolis, IN 46231
Phone: 317/243-0811
Fax: 317/486-5095
Internet:http://www.heritage-enviro.com

QUALITY ASSURANCE REPORT PACKAGE # 0702.1
FOR
HERITAGE REMEDIATION / ENGINEERING

DOUG OPELL
HERITAGE REMEDIATION / ENGINEERING
7821 WEST MORRIS STREET
INDIANAPOLIS, INDIANA 46231

SAMPLE RANGE:

A623858 – A623862

PROJECT:

HERITAGE RESEARCH GROUP

HERITAGE ENVIRONMENTAL SERVICES, LLC
COMMERCIAL LABORATORY OPERATIONS
7901 WEST MORRIS STREET
INDIANAPOLIS, INDIANA 46231
PHONE: (317) 243-8304
FAX: (317) 486-5095

APPROVED BY: Kurt Morris April 18 2003
PROJECT CHEMIST

Recycled Paper

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Heritage Environmental Services, LLC
7901 West Morris Street
Indianapolis, IN 46231
Phone: (317) 243-0811
Fax: (317) 486-5095

SHIPPING AND RECEIVING

The following samples were received at Heritage Environmental laboratory on March 27, 2003:

A623858 – A623862

The samples were received within EPA recommended holding times and in good condition. If required, a pH screen confirmed that the sample was preserved to acceptable pH levels. Samples were analyzed within holding times as prescribed by the analytical method. Exceptions to these statements, additional information, and any analytical anomalies are noted on the accompanying Certificates of Analysis Reports.

Nancy J. Carman
Document Control Officer

ACCREDITED IN ACCORDANCE WITH nelac

TO ENSURE PROPER HANDLING OF SAMPLES PLEASE COMPLETE THIS ENTIRE FORM

HERITAGE ENVIRONMENTAL SERVICES

COMMERCIAL LABORATORY OPERATIONS

7901 West Morris Street
Indianapolis, Indiana 46231 (317) 243-0811 Fax (317) 486-5095

I - 96500 [redacted]

Co. Name: HRG-HRG
Project Name:
Quote No.: 2142497 PO No.:

ENVIRONMENTAL PROGRAM:

CWA NPDES _____ IWP _____ SLUDGE _____

RCRA MW _____ SW _____ DISPOSAL _____

SDWA _____ CERCLA/SUPERFUND _____ OTHER _____

Sampled by:

Analyses Requested (Note special detection limits or methods): 2142497

Report To:
Co:
Add:
Attn: Ralph Roper
Phone:

Accelerated Turnaround Requested _____ (Subject to Additional Charge)

Result Request by: 3 / 31 / 03 (Mo / Day / Yr)

(Date must be Accepted and Approved by Lab)

Client ID:	Date:	Time:	Comp	Grab	Sample Description	Sample Type (Matrix): DW, GW, WW, Soil, Oil, Sludge, Other	No. of Containers	2142497	Remarks:	LAB Sample No.
		AM PM								A623858
		AM PM			SESTAB VARIANCE TEST 1		1	✓	Turnite Today	↓
		AM PM			" 2		1	✓		859
		AM PM			" 3		1	✓		860
		AM PM			" 4		1	✓		861
		AM PM			" 5		1	✓		862
		AM PM								
		AM PM								
		AM PM								
		AM PM								
		AM PM								
		AM PM								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	3/27/03 / 2:00 pm			/	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	/			/	
Relinquished by: (Signature)	Date/Time	Received for Lab by: (Signature)	Date/Time	Remarks	
	/	[signature]	3-27-03 / 1400		

Properly Preserved _____

Broken Bottles _____

21.2°

Distribution: White original and Yellow copy to accompany sample to laboratory.
Pink copy to be retained by client.

Rev. 6/95

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M 58

U. S. EPA -CLP

April 17 2003

COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Lab Name : HES - Commercial Laboratory Contract : HES - RCRA

Lab Code: Metals Case No. : _____ SAS No. : _____ SDG No.: _____

Instrument ID Number : _____ Method : _____

EPA Sample No.	Lab Sample No.	
	A623858	TCLP
	A623859	
	A623860	
	A623861	
	A623862	

Were ICP interelement corrections applied? Yes/No __ yes

Were ICP background corrections applied? Yes/No __ yes

If yes-were raw data generated before application of background corrections? Yes/No __ no

Comments:

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 the conditions detailed above. Release of the data contained 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 : _____ Name : _____

Date : _____ Title : _____

250

HERITAGE ENVIRONMENTAL SERVICES, LLC
COMMERCIAL LABORATORY OPERATIONS
METALS SECTION

CASE NARRATIVE

SAMPLE # A623858-862

These samples were analyzed using normal procedures with no modifications.

Steven J Endersen 4-17-03

Steven J Endersen, Senior Chemist

ACCREDITED IN ACCORDANCE WITH nelac

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U. S. EPA -CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

Initial Calibration Source : Perkin-Elmer

Continuing Calibration Source : Inorganic Ventures

Concentration Units: uG/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration % R (1)	Continuing Calibration True	Continuing Calibration Found 232130	Continuing Calibration % R (1)	Continuing Calibration Found 102206	Continuing Calibration % R (1)		M
Antimony	1000	1030	103	1000	1020	102.0	1020	102.0		P
Arsenic	1000	984	98.4	5000	5020	100.4	5080	101.6		P
Barium	1000	1020	102	5000	4990	99.8	4960	99.2		P
Beryllium	1000	1010	101	5000	5030	100.6	5030	100.6		P
Cadmium	1000	1040	104	5000	4990	99.8	5070	101.4		P
Chromium	1000	1050	105	5000	4970	99.4	5040	100.8		P
Lead	1000	1040	104	5000	4960	99.2	4980	99.6		P
Mercury	2.00	2.01	100	3.00	3.04	101	3.11	104		CV
Nickel	1000	1050	105	5000	5000	100.0	5000	100.0		P
Selenium	1000	1000	100	5000	5000	100.0	5020	100.4		P
Silver	500	491	98.2	1000	989	98.9	1010	101.0		P
Thallium	1000	1030	103	5000	4800	96.0	4780	95.6		P
Vanadium	1000	1050	105	5000	5070	101.4	5090	101.8		P
Zinc	1000	1060	106	5000	5030	100.6	4990	99.8		P

ICP Analytical Run Time (1) Control Limits: Mercury 80-120: Other Metals 90-110: Cyanide 85-115.

FORM II (Part 1) - IN

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U. S. EPA -CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: HES - Commercial Laboratories Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

Initial Calibration Source : Perkin-Elmer

Continuing Calibration Source : Inorganic Ventures

Concentration Units: uG/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration % R (1)	Continuing Calibration True	Continuing Calibration Found 105729	Continuing Calibration % R (1)	Continuing Calibration Found 113251	Continuing Calibration % R (1)		M
Antimony				1000	1030	103.0	1010	101.0		P
Arsenic				5000	5120	102.4	5050	101.0		P
Barium				5000	4980	99.6	4920	98.4		P
Beryllium				5000	5070	101.4	5020	100.4		P
Cadmium				5000	5130	102.6	5040	100.8		P
Chromium				5000	5080	101.6	5020	100.4		P
Lead				5000	5020	100.4	4950	99.0		P
Mercury				3.00	3.16	105	3.15	105		CV
Nickel				5000	5030	100.6	4970	99.4		P
Selenium				5000	5070	101.4	4960	99.2		P
Silver				1000	1010	101.0	998	99.8		P
Thallium				5000	4830	96.6	4760	95.2		P
Vanadium				5000	5120	102.4	5050	101.0		P
Zinc				5000	5020	100.4	4900	98.0		P

ICP Analytical Run Time (1) Control Limits: Mercury 80-120: Other Metals 90-110: Cyanide 85-115.

FORM II (Part 1) - IN

U. S. EPA -CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: HES - Commercial Laboratories Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

Initial Calibration Source : Perkin-Elmer

Continuing Calibration Source : Inorganic Ventures

Concentration Units: uG/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration % R (1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration % R (1)	Found	% R (1)		M
				E	115623					
Antimony				1000	1020	102.0				P
Arsenic				5000	5110	102.2				P
Barium				5000	4990	99.8				P
Beryllium				5000	5060	101.2				P
Cadmium				5000	5110	102.2				P
Chromium				5000	5090	101.8				P
Lead				5000	5010	100.2				P
Mercury				3-16	105					CV
Nickel				5000	5020	100.4				P
Selenium				5000	5020	100.4				P
Silver				1000	1010	101.0				P
Thallium				5000	4840	96.8				P
Vanadium				5000	5120	102.4				P
Zinc				5000	5000	100.0				P

ICP Analytical Run Time (1) Control Limits: Mercury 80-120: Other Metals 90-110: Cyanide 85-115.

FORM II (Part 1) - IN

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U. S. EPA -CLP

2B

CRDL STANDARD FOR AA AND ICP

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

AA CRDL Calibration Source : Inorganic Ventures

ICP CRDL Calibration Source : Inorganic Ventures

Concentration Units: uG/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP						M
	True	Found	% R	True	Initial Found 230556	% R	Final Found 114437	% R		
Antimony				120	114	95.0	116	96.7		P
Arsenic				20	16.2	81.0	20	100.0		P
Barium				NA						
Beryllium				10	9.97	99.7	10.3	103.0		P
Cadmium				10	10.2	102.0	10.4	104.0		P
Chromium				20	20.6	103.0	21.6	108.0		P
Lead				100	102	102.0	103	103.0		P
Mercury	0.20	0.23	115							CV
Nickel				80	81.7	102.1	82.7	103.4		P
Selenium				10	8.32	83.2	13.3	133.0		P
Silver				20	19.9	99.5	20.3	101.5		P
Thallium				20	20.9	104.5	23.5	117.5		P
Vanadium				100	103	103.0	105	105.0		P
Zinc				40	44.4	111.0	41.7	104.3		P

FORM II (Part 2) - IN

U. S. EPA -CLP

3

BLANKS

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No.: ___ SAS No. : ___ SDG No.: _____

Preparation Blank Matrix : Water

Preparation Blank Concentration Units (uG/L or mG/kG) : uG/L

Analyte	Initial Calibration Blank (uG/L)	C	Continuing Calibration Blank (uG/L) 1	C	2	C	3	C	Preparation Blank	C	M
	224231		225809		232524		102602		102959		
Antimony	5	U	5	U	5	U	5	U	5	U	P
Arsenic	7.26	B	2.54	B	9.71	B	7.75	B	2.1	U	P
Barium	0.18	U	0.18	U	0.18	U	0.18	U	0.414	B	P
Beryllium	0.067	U	0.067	U	0.067	U	0.067	U	0.067	U	P
Cadmium	0.52	U	0.52	U	0.52	U	0.52	U	0.52	U	P
Chromium	0.31	U	0.31	U	0.31	U	0.367	B	0.31	U	P
Lead	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	P
Mercury	0.06	B	0.06	B	0.05	B	0.036	U	0.36	U	CV
Nickel	-1.43	B	0.61	U	0.61	U	0.61	U	0.61	U	P
Selenium	8.6	U	8.6	U	8.6	U	8.6	U	8.6	U	P
Silver	0.29	U	0.29	U	0.29	U	0.29	U	0.29	U	P
Thallium	12.1	B	2.8	U	15.5	B	29.2	B	12	B	P
Vanadium	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	P
Zinc	2.2	U	2.2	U	2.2	U	2.2	U	11.6	B	P

ICP Analytical Run Time

FORM III -IN

U. S. EPA -CLP

3

BLANKS

Lab Name: HES - Commercial Laboratories Contract : _____

Lab Code: _____ Case No. : ___ SAS No. : ___ SDG No.: _____

Preparation Blank Matrix : _____

Preparation Blank Concentration Units (uG/L or mG/kG) : _____

Analyte	Initial Calibration Blank (uG/L)	C	Continuing Calibration Blank (uG/L) 4	C	5	C	6	C	Preparation Blank	C	M
			110124		113646		120018				
Antimony			5	U	5	U	5	U			P
Arsenic			7.72	B	8.47	B	8.44	B			P
Barium			0.18	U	0.18	U	0.18	U			P
Beryllium			0.067	U	0.067	U	0.067	U			P
Cadmium			0.52	U	0.52	U	0.52	U			P
Chromium			0.348	B	0.565	B	0.481	B			P
Lead			2.2	U	2.2	U	2.2	U			P
Mercury			0.04	B	0.036	U	0.036	U			CV
Nickel			0.61	U	-0.82	B	0.61	U			P
Selenium			13.9	B	16.3	B	13.6	B			P
Silver			0.29	U	0.29	U	0.29	U			P
Thallium			28.5	B	21.2	B	22.6	B			P
Vanadium			1.2	U	1.2	U	1.2	U			P
Zinc			2.2	U	2.2	U	2.2	U			P

ICP Analytical Run Time

FORM III -IN

U. S. EPA -CLP

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: ___

ICP ID Number : 334 ICS Source : Perkin-Elmer

Date of Analysis : 28-Mar-03

Concentration Units: uG/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found % R	Final Found Sol. A	Final Found Sol. AB	Final Found % R
Aluminum		500,000		547,000	109.4		543,000	108.6
Antimony		600		615	102.5		616	102.7
Arsenic		100		100	100.0		88	88.4
Barium		500		526	105.2		521	104.2
Beryllium		500		527	105.4		529	105.8
Cadmium		1,000		1,090	109.0		1,110	111.0
Calcium		500,000		500,000	100.0		503,000	100.6
Chromium		500		511	102.2		521	104.2
Cobalt		500		499	99.8		501	100.2
Copper		500		555	111.0		561	112.2
Iron		200,000		197,000	98.5		197,000	98.5
Lead		1,000		992	99.2		999	99.9
Magnesium		500,000		529,000	105.8		533,000	106.6
Manganese		500		510	102.0		510	102.0
Mercury								
Nickel		1,000		969	96.9		964	96.4
Potassium								
Selenium		50		51	101.4		50	99.8
Silver		200		220	110.0		224	112.0
Sodium								
Thallium		100						
Vanadium		500		523	104.6		525	105.0
Zinc		1,000		980	98.0		971	97.1

FORM IV - IN

9

U. S. EPA -CLP

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

A623861

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : ____ SAS No. : ____ SDG No.: ____

Matrix (soil/water) : TCLP Level (low/med): ____

Initial Wt/Vol : 50 mL

% Solids for Sample : _____ Final Volume : 50 mL

Dilution : 5

Concentration Units (uG/L or mG/kG dry weight) : uG/L

Analyte	Control Limit %R	Q1482126 Spiked Sample (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	75 - 125	1100		25	U	1,000	110.0		P
Arsenic	75 - 125	4280		10.5	U	4,000	107.0		P
Barium	75 - 125	4600		364		4,000	105.9		P
Beryllium	75 - 125	106		0.335	U	100	106.0		P
Cadmium	75 - 125	110		2.6	U	100	110.0		P
Chromium	75 - 125	424		2.13	B	400	105.5		P
Lead	75 - 125	1050		11	U	1,000	105.0		P
Mercury	75-125	7.8		0.36	U	~~1.00~~ 100	78.0		CV
Nickel	75 - 125	1030		3.05	U	1,000	103.0		P
Selenium		45800		40300		4,000	NA		P
Silver	75 - 125	117		1.45	U	100	117.0		P
Thallium	75 - 125	5790		95		6,000	94.9		P
Vanadium	75 - 125	1070		6.81	B	1,000	106.3		P
Zinc	75 - 125	1070		18.8	B	1,000	105.1		P

SJE 4-17-03

FORM V (Part 1) - IN HA623384

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U. S. EPA -CLP

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DUPLICATES

EPA SAMPLE NO.

A623861

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : ____ SAS No. : ____ SDG No.: ____

Matrix (soil/water) : TCLP Level (low/med): _____

% Solids for Sample : _____ % Solids for Duplicate : ____

Concentration Units (uG/L or mG/kG dry weight) : uG/L

Analyte	Control Limit (1)	Sample (S)	C	Q1482127 Sample Duplicate (D)	C	RPD (2)	Q	M
Antimony		25	U	25	U			P
Arsenic		10.5	U	10.5	U			P
Barium		364		360		1.1		P
Beryllium		0.335	U	0.335	U			P
Cadmium		2.6	U	2.6	U			P
Chromium	1.6	2.13	B	1.58	B	0.6		P
Lead		11	U	11	U			P
Mercury								CV
Nickel		3.05	U	3.05	U			P
Selenium		40300		38800		3.8		P
Silver		1.45	U	1.45	U			P
Thallium	14	95		19.6	B	75.4	*	P
Vanadium	6	6.81	B	9.35	B	2.5		P
Zinc	11	18.8	B	11.3	B	7.5		P

(1) - Control limit 20% unless listed.

(2) - Absolute difference if concentrations between CRDL and 5*CRDL.

FORM VI - IN

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U. S. EPA -CLP

5A

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

EPA SAMPLE NO.

A623861

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

Matrix (soil/water) : Water Level (low/med): _____

Initial Wt/Vol : 50 mL

% Solids for Sample : _____ Final Volume : 50 mL

Dilution : 5

Concentration Units (uG/L or mG/kG dry weight) : uG/L

Analyte	Sample Result (SR)	Q1482127 Spiked Sample (SSR)	C	0 Spiked Duplicate Sample (SDS)	C	Spike Added (SA)	% RPD	Q	M
Mercury	6.36	78.0		81.0		~~1.00~~ 10.0	3.8		CV

SOE 4-17-03

FORM V (Part 1) - IN + A623384

U. S. EPA -CLP
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LABORATORY CONTROL SAMPLE

Q1482125

Lab Name: Heritage Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No.: _____

Solid LCS Source : _____

Aqueous LCS Source : SPEX

Analyte	Aqueous (uG/L) True	Found	%R	True	Found	C	Limits		%R
Antimony	500	540	108.0						
Arsenic	2000	2,090	104.5						
Barium	2000	2,130	106.5						
Beryllium	50	53	106.2						
Cadmium	50	55	110.4						
Chromium	200	217	108.5						
Lead	500	534	106.8						
Mercury	2.00	2.14	107						
Nickel	500	528	105.6						
Selenium	2000	2,130	106.5						
Silver	50	59	118.6						
Thallium	3000	3,040	101.3						
Vanadium	500	537	107.4						
Zinc	500	541	108.2						

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FORM VII - IN

202

U. S. EPA - CLP
17
STANDARD SOLUTIONS SOURCES

Lab Name: Heritage Environmental Services, LLC Contract_____

	CALIBRATION					MATRIX		
Analyte	STANDARD	ICV	TRACE CCV	CCV	CRDL	SPIKE	ICS	Method
Aluminum	INV	PE		INV		SPEX	PE	P
Antimony	INV	PE	SPEX	INV	PE	INV		P
Arsenic	INV	PE	SPEX	INV	PE	SPEX		P
Barium	INV	PE		INV		SPEX	PE	P
Beryllium	INV	PE	SPEX	INV	PE	SPEX	PE	P
Cadmium	INV	PE	SPEX	INV	PE	SPEX	PE	P
Calcium	INV	PE		INV		SPEX	PE	P
Chromium	INV	PE	SPEX	INV	PE	SPEX	PE	P
Cobalt	INV	PE	SPEX	INV	PE	SPEX	PE	P
Copper	INV	PE		INV	PE	SPEX	PE	P
Iron	INV	PE		INV		SPEX	PE	P
Lead	INV	PE	SPEX	INV	PE	SPEX	PE	P
Magnesium	INV	PE		INV		SPEX	PE	P
Manganese	INV	PE	SPEX	INV	PE	SPEX	PE	P
Mercury	INV	NIST		FISHER	FISHER	FISHER		CV
Nickel	INV	PE		INV	PE	SPEX	PE	P
Potassium	INV	PE		INV		SPEX		P
Selenium	INV	PE	SPEX	INV	PE	SPEX		P
Silver	INV	PE	PE	INV	PE	SPEX	PE	P
Sodium	INV	PE		INV		SPEX		P
Thallium	INV	PE	SPEX	INV	PE	SPEX		P
Vanadium	INV	PE	SPEX	INV	PE	SPEX	PE	P
Zinc	INV	PE		INV	PE	SPEX	PE	P
Titanium	INV	PE		INV		SPEX		P
Strontium	INV	PE		INV		SPEX		P
Molybdenum	INV	PE		INV		SPEX		P
Boron	INV	PE		INV		SPEX		P
Tin	INV	PE		INV		INV		P
Zirconium	INV	FISHER		INV		SPEX		P
Lithium	INV	PE		INV		SPEX		P
Silicon	INV	PE		INV		INV		P
Bismuth	INV	PE		INV		SPEX		P
Yttrium	INV	PE		INV		SPEX		P

PE = Perkin Elmer Pure
INV = Inorganic Ventures

WATER METHOD DETE[illegible] LIMITS, uG/L — Hotblock / Hotplate

Element	ICP-MS	Vista	Vista	Vista	Vista	Vista	Vista	Vista	Vista	Vista	GFAA	GFAA	CVAA	CVAA	CVAA
	#320	#334	#334	#334	#334	#334	#370	#370	#370	#370	PE5100	PE5100	FIMS	FIMS	FIMS
	AAS	JPK	JJL	DAD	JPK	JJL	JPK	JJL	JPK	JJL	A	B	DAD	MAH	JSO
	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock	Hotblock
Method					Trace	Trace			Trace	Trace					
Complete	1/30/03	9/10/02		9/27/02		9/10/02				10/16/02	10/8/02	12/10/02	5/21/02	7/3/02	6/20/02
Al	1.0	9.4		6.0		5.3				5.8					
B	0.61	5.4		2.5		4.6				4.8					
Sb	0.092	3.5		5.5		2.5				2.1		2.1			
As	0.66	3.5		5.4		2.9				2.1	1.6	1.7			
Ba	0.14	0.16		0.14		0.14				0.14					
Be	0.070	0.068		0.093		0.054				0.069					
Cd	0.048	0.44		0.27		0.24				0.19		0.28			
Ca		6.4		9.6		5.9				6.1					
Cr	0.53	0.38		0.42		0.20				0.42		0.29			
Co	0.037	0.74		0.84		0.36				0.46					
Cu	0.33	0.44		2.8		0.56				1.1		0.90			
Fe		2.9		5.6		2.6				2.0					
Pb	0.060	2.3		3.1		1.5				2.3	0.92	1.6			
Mg		2.9		3.2		2.2				3.0					
Mn	0.13	0.34		0.69		0.26				0.34					
Hg													0.048	0.016	0.022
Mo	0.064	0.53		1.5		0.50				0.25					
Ni	0.46	1.1		1.3		0.59				0.61					
K		4.3		5.4		3.0				13					
Li		0.90		2.4		0.72				0.58					
P													Method	1631-E	1631-E
Se	0.51	7.7		6.7		3.4				3.5	3.2	2.0	Instrument	373	373
Si		1.4		2.9		1.7				2.5			Analyst	JSO	
Sr	0.10	0.37		0.53		0.51				0.30			Prep.		
Sn	0.087	2.0		1.5		0.73				1.7			Complete	1/16/2003	
Ag	0.063	0.30		0.81		0.16				0.15		0.20	Hg	0.88 ppt	
Na		8.5		2.7		3.4				6.8					
Th	0.029														
Ti	0.81	0.91		1.2		0.39				0.83					
Tl	0.029	4.5		4.8		2.0				2.0	1.6	1.3			
U	0.022														
V	0.86	0.91		1.6		0.54				0.42					
Zn	1.7	1.5		2.4		0.82				1.8					
Zr	0.67	1.0		2.3		0.47				1.5					
As prep															
Se prep											1.5				
Pb (DW)															

Water

4/15/2003

SOIL METHOD DETECTION LIMITS, mg/kg
Heritage

Instrument	Vista	Vista	ICAP-61	CVAA	ICP-MS
	#334	#334	TRACE	PE-FIMS	#320
Complete:	9/5/2000	9/6/2001	9/18/01	7/24/02	10/5/1999
Element	**Hot Plate**	**HotBlock**	**HotBlock**	**HotBlock**	***Starch***
Al	10	5.4			1.04
B	1.1	0.26			0.930
Sb	0.40	0.27	0.24		
As	0.43	0.30	0.25		0.126
Ba	0.17	0.19			0.218
Be	0.016	0.011	0.0077		0.00537
Cd	0.031	0.040	0.021		0.0157
Ca	5.4	9.0			
Cr	0.18	0.074	0.10		1.45
Co	0.12	0.19	0.19		0.00936
Cu	0.19	0.24			0.0990
Fe	100	210			
Pb	0.23	0.28	0.16		0.0366
Hg				0.0016	
Mg	2.5	5.4			
Mn	1.1	2.5	1.7		0.0980
Mo	0.046	0.061			0.0720
Ni	0.32	0.33			0.141
K	9.9	4.0			
Li	0.13	0.067			
Se	0.88	0.40	0.33		0.0727
Si	14	4.9			
Sr	0.34	0.10			
Sn	0.96	0.48			0.203
Ag	0.083	0.046	0.12		0.00437
Na	3.1	1.2			
Ti	0.20	0.32			1.91
Tl	0.40	0.24	0.27		0.0145
V	0.13	0.043	0.10		0.177
Zn	1.5	0.77			0.743
Zr	0.47	0.13			0.0725
Th					0.0497
U					0.0537

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U. S. EPA -CLP

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INSTRUMENT DETECTION LIMITS (ANNUAL)

Lab Name: Heritage Environmental Service, LLC Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____ SDG No. _____

ICP ID Number : Vista ICP #334 Date: Jul 12, 2002

Flame AA ID Number : PE FIMS-CVAA

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	USEPA CRDL (uG/L)	Laboratory Reporting Limits	High Calibration Standard	IDL (uG/L)	M
Aluminum	237.312		200	50	10,000	8.2	P
Antimony	217.582		60	10	2,000	5.0	P
Arsenic	188.980		10	10	10,000	4.6	P
Barium	233.527		200	10	10,000	0.18	P
Beryllium	234.861		5	4	10,000	0.067	P
Bismuth							P
Boron	249.772			50	10,000	12	P
Cadmium	228.802		5	5	10,000	0.52	P
Calcium	315.887		5000	100	100,000	2.4	P
Chromium	267.716		10	10	10,000	0.31	P
Cobalt	231.160		50	10	10,000	0.87	P
Copper	324.754		25	20	10,000	0.54	P
Iron	261.382		100	20	10,000	2.0	P
Lead	220.353		3	10	10,000	2.2	P
Lithium	610.365			10	10,000	1.9	P
Magnesium	279.078		5000	100	100,000	4.3	P
Manganese	293.305		15	10	10,000	0.75	P
Mercury **	253.7		0.20	0.20	5.0	0.036	CV
Molybdenum	202.032			10	2,000	1.1	P
Nickel	221.648		40	10	10,000	1.6	P
Palladium	340.458			1	10,000	0.84	P
Potassium	728.181		5000	100	100,000	4.9	P
Selenium	196.026		5	10	10,000	8.6	P
Silicon	251.611			100	10,000	4.8	P
Silver	328.068		10	10	2,000	0.29	P
Sodium	589.592		5000	100	100,000	1.1	P
Sodium	568.821		5000		100,000	128	P
Strontium	216.596			10	10,000	0.70	P
Thallium	190.794		10	10	10,000	2.8	P
Tin	189.927			10	10,000	1.6	P
Titanium	322.284			10	10,000	1.1	P
Uranium							P
Vanadium	289.164		50	10	10,000	1.2	P
Yttrium				10			P
Zinc	206.200		20	20	10,000	2.2	P
Zirconium	257.147			10	10,000	0.68	P

Comments: **Mercury on 12/19/02 (Hotblock)

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ICP LINEAR RANGES (QUARTERLY)

Lab Name: Heritage Environmental Services, LLC Contract : _____

Lab Code: _____ Case No. : _____ SAS No. : _____

ICP ID Number : ICP#334 Date Jan 20, 2003

Analyte	Integ. Time (Sec.)	Concentration (uG/L)	M
Aluminum	20	500,000	P
Antimony	20	200,000	P
Arsenic	20	100,000	P
Barium	20	50,000	P
Beryllium	20	20,000	P
Boron	20	200,000	P
Cadmium	20	20,000	P
Calcium	20	500,000	P
Chromium	20	100,000	P
Cobalt	20	100,000	P
Copper	20	100,000	P
Iron	20	500,000	P
Lead	20	100,000	P
Lithium	20	20,000	P
Magnesium	20	1,000,000	P
Manganese	20	200,000	P
Mercury			P
Molybdenum	20	50,000	P
Nickel	20	100,000	P
Phosphorus			P
Potassium	20	50,000	P
Selenium	20	200,000	P
Silicon	20	50,000	P
Silver	20	5,000	P
Sodium - L	20	80,000	P
Sodium - H	20	500,000	P
Strontium	20	100,000	P
Thallium	20	100,000	P
Tin	20	100,000	P
Titanium	20	500,000	P
Uranium			P
Vanadium	20	100,000	P
Zinc	20	100,000	P
Zirconium	20	100,000	P

Comments: _____

FORM XII - IN

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U. S. EPA-CLP

11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Heritage Environmental Services, LLC

ICP ID Number: ICP #334 Date: 23-Jan-03 Contract: _____

	Interelement Correction Factors for:												
IEC Factors	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn
Ag 328.068	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Al 237.312	1.00000000	0.00000000	0.00470575	0.00000000	0.00000000	0.00000000	0.00186971	-0.00031119	0.00000000	0.00000000	0.00000000	0.00000000	-0.00249707
As 188.980	0.00000000	1.00000000	0.00008300	0.00000000	0.00000000	0.00000000	0.00000000	0.00027721	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
B 249.772	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00021773	0.00000000	-0.00045787	0.00000000	0.00000000	0.00000000
Ba 233.527	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Be 234.861	-0.00000006	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00020260	0.00000000	0.00000000	0.00000000
Ca 315.887	0.00029944	0.00002675	0.00000000	0.00000000	1.00000000	0.00000000	0.00380598	-0.00215719	0.00000000	0.00004221	0.00000000	0.00000000	-0.00002450
Cd 228.802	0.00000000	-0.00142810	0.00000000	0.00000000	0.00000000	1.00000000	0.00012811	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Co 231.160	0.00000000	0.00000000	0.00003051	-0.00307138	0.00000151	0.00000000	1.00000000	0.00000000	-0.00001648	0.00009158	0.00000000	0.00000185	0.00000000
Cr 267.716	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00004002
Cu 324.754	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00059888	-0.00012020	1.00000000	-0.00014379	0.00000000	0.00000000	0.00000000
Fe 261.382	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00027317	0.00048234	-0.00000077	1.00000000	0.00000000	0.00000000	-0.00016547
K 728.181	0.00000000	0.00000000	0.00043270	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000	0.00009230
Li 610.365	0.00000000	0.00000000	0.00000000	0.00000000	-0.00040127	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Mg 279.078	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00019165	0.00000000	1.00000000	-0.00066478
Mn 293.305	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00007173	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000
Mo 202.032	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Na 568.821	0.00004917	-0.00031644	-0.02262438	-0.00365382	0.00948627	0.00029583	0.00347690	-0.00141426	-0.00023296	-0.00005185	0.00000000	0.00000000	-0.00049062
Na 589.592	0.00000000	0.00000000	0.00670712	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Ni 221.648	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00018562	-0.00049387	-0.00021069	0.00000000	0.00000000	0.00000000	0.00000000
Pb 220.353	0.00021700	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00008509	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Sb 217.582	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00011153	0.00000000	0.00000000	0.00000000
Se 196.026	0.00001566	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000856	0.00000000	0.00000000	0.00000000
Si 251.611	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00002285	0.00000000	0.00000000	0.00000000
Sn 189.927	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00012170	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Sr 216.596	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00006727	0.00018422	0.00000000	0.00000000	0.00000000
Ti 322.284	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00018560
Tl 190.794	-0.00008550	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00393105	0.00000000	0.00001293	0.00000000	0.00000000	0.00000000	0.00069854
V 289.164	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00282773	0.00000000	0.00004622	0.00000000	0.00000000	-0.00294205
Zn 206.200	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00267460	0.00000000	-0.00006782	0.00000000	0.00000000	0.00000000
Zr 257.147	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00005121	0.00000000	0.00013115	0.00000000	0.00000000	0.00000000

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U. S. E. .-CLP

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ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Heritage Environmental Services, LLC

ICP ID Number: ICP #334 Date: 23-Jan-03 Contract: _____

	Interelement Cc											
Analyte	Mo	Na	Ni	Pb	Sb	Si	Sn	Sr	Ti	V	Zn	Zr
Ag 328.068	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000304	0.00349456
Al 237.312	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00629762
As 188.980	0.00044807	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00007083	0.00000000	0.00000000	0.00000000
B 249.772	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Ba 233.527	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00017348	0.00000000	0.00000000
Be 234.861	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Ca 315.887	0.00017788	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00003630	0.00224128	0.00000000	-0.00852501
Cd 228.802	0.00000000	0.00000000	0.00006618	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Co 231.160	0.00000000	0.00000000	0.00032335	0.00000000	0.00699653	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Cr 267.716	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Cu 324.754	0.00028541	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Fe 261.382	-0.00018704	0.00000000	0.00000000	-0.00735656	0.00000000	0.00000000	0.00000000	0.00000000	-0.00179565	0.00000000	0.00000000	0.00000000
K 728.181	0.00061386	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00303057	0.00000000	0.00000000	0.00000000
Li 610.365	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Mg 279.078	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Mn 293.305	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Mo 202.032	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Na 568.821	-0.08390009	1.00000000	-0.00041218	-0.00114435	0.00000000	0.00000000	0.00000000	0.00000000	0.00408838	0.00000000	0.00000000	0.01279356
Na 589.592	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Ni 221.648	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00209598	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Pb 220.353	-0.00287668	0.00000000	0.00003112	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00010464	-0.00000927
Sb 217.582	0.00000000	0.00000000	-0.00137162	-0.00059215	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Se 196.026	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00009563
Si 251.611	0.00000000	0.00000000	0.00006331	0.00001492	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000	-0.00015519	0.00000000
Sn 189.927	0.00000000	0.00000000	-0.00007220	-0.00003949	0.00000000	0.00000000	1.00000000	0.00000000	0.00036284	0.00000000	0.00000000	0.00038577
Sr 216.596	0.00000000	0.00000000	0.00014771	-0.00000086	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Ti 322.284	0.00148644	0.00000000	-0.00000047	0.00000051	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000	0.00000000	0.00030261
Ti 190.794	-0.00227155	0.00000000	-0.00001625	0.00004238	0.00000000	0.00000000	0.00000000	0.00000000	0.00201908	0.00237125	0.00000000	0.00000000
V 289.164	-0.00090941	0.00000000	0.00000315	-0.00000323	0.00000000	0.00000000	0.00000000	0.00000000	-0.00028940	1.00000000	0.00000000	0.00164938
Zn 206.200	0.00048699	0.00000000	0.00002436	0.00002818	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	1.00000000	0.00000000
Zr 257.147	0.00000000	0.00000000	0.00000029	0.00000205	0.00000000	0.00000000	0.00046409	0.00000000	-0.00102008	0.00000000	0.00000291	1.00000000

Blank (Blk) 3/28/03, 10:19:00 PM Rack 1, Tube 1

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-14.957	-11.972	-18.944
Al	237.312	0.94687	-1.4078	0.51504
As	188.980	-0.009564	-2.4039	0.36121
B	249.772	11.476	7.4558	10.306
Ba	233.527	80.038	78.519	77.538
Be	234.861	-2.7636	-3.4924	-5.5349
Ca	315.887	149.15	142.99	148.15
Cd	228.802	0.53017	0.053720	0.096349
Co	231.160	8.9274	8.6186	10.928
Cr	267.716	4.6168	5.2537	3.5962
Cu	324.754	109.18	114.50	107.28
Fe	261.382	7.5166	2.9595	5.6008
K	728.181	79.760	82.301	77.760
Li	610.365	807.31	828.27	804.67
Mg	279.078	1.2929	0.11775	0.36707
Mn	293.305	5.6851	2.1164	13.158
Mo	202.032	8.7731	7.0297	6.3289
Na	589.592	1231.1	1209.3	1233.1
Na	568.821	-480.93	-504.92	-499.66
Ni	221.648	-0.001019	-0.81618	-0.88816
Pb	220.353	-5.1354	-2.7793	-0.53801
Sb	217.582	-1.4308	-1.2612	-0.30360
Se	196.026	-0.11227	1.2989	0.43421
Si	251.611	30.744	28.282	27.563
Sn	189.927	-0.007268	-0.49880	0.83773
Sr	216.596	0.22916	-0.86992	-1.2704
Ti	322.284	84.730	87.078	76.584
Tl	190.794	-1.2293	-1.5940	0.073585
V	289.164	0.51640	-0.31568	0.11141
Y	361.104	186540	187664	189307
Zn	206.200	1.6802	1.0288	1.1085
Zr	257.147	11.835	14.805	16.260

ICP #334 3/28/03

CCV=S12658
DLS=S12709
CDL01=S12775
HMCS=STD2
ICS-A=S12756
ICS-AB=S12776

ICV01-19=S12589
ICV01-07=S12676
ICV01-31=S12675

STD2=S12774
MADE 03-28-03

STD3=S12618
MADE 02-05-03

STD4=S12620
MADE 02-05-03

STD3X=S12712

JPK #3506

03032808K334

A623858-862
TCLP

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ag	328.068	0.000000	ppm	3.498	22.9	-15.291
Al	237.312	0.000000	ppm	1.254	6944.8	0.018050
As	188.980	0.000000	ppm	1.501	219.4	-0.68409
B	249.772	0.000000	ppm	2.068	21.2	9.7460

Sb As Ba Be Cd Cu Pb Ni
Se Ag Tl V Zn

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ba	233.527	0.000000	ppm	1.260	1.6	78.698
Be	234.861	0.000000	ppm	1.437	36.6	-3.9303
Ca	315.887	0.000000	ppm	3.306	2.3	146.76
Cd	228.802	0.000000	ppm	0.264	116.3	0.22675
Co	231.160	0.000000	ppm	1.254	13.2	9.4913
Cr	267.716	0.000000	ppm	0.836	18.6	4.4889
Cu	324.754	0.000000	ppm	3.742	3.4	110.32
Fe	261.382	0.000000	ppm	2.288	42.7	5.3590
K	728.181	0.000000	ppm	2.276	2.8	79.940
Li	610.365	0.000000	ppm	12.930	1.6	813.41
Mg	279.078	0.000000	ppm	0.619	104.5	0.59256
Mn	293.305	0.000000	ppm	5.635	80.7	6.9866
Mo	202.032	0.000000	ppm	1.259	17.1	7.3772
Na	589.592	0.000000	ppm	13.186	1.1	1224.5
Na	568.821	0.000000	ppm	12.613	2.5	-495.17
Ni	221.648	0.000000	ppm	0.493	86.7	-0.56845
Pb	220.353	0.000000	ppm	2.299	81.6	-2.8176
Sb	217.582	0.000000	ppm	0.608	60.9	-0.99852
Se	196.026	0.000000	ppm	0.712	131.7	0.54027
Si	251.611	0.000000	ppm	1.668	5.8	28.863
Sn	189.927	0.000000	ppm	0.676	611.5	0.11056
Sr	216.596	0.000000	ppm	0.776	121.9	-0.63704
Ti	322.284	0.000000	ppm	5.507	6.7	82.797
Tl	190.794	0.000000	ppm	0.877	95.6	-0.91659
V	289.164	0.000000	ppm	0.416	399.9	0.10404
Zn	206.200	0.000000	ppm	0.355	27.9	1.2725
Zr	257.147	0.000000	ppm	2.255	15.8	14.300

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.000000	187837	1391.976	0.7

Standard 2 (Std) 3/28/03, 10:22:55 PM Rack 1, Tube 2

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	63026	62955	63131	
Al	237.312	4838.4	4839.1	4864.9	
As	188.980	2669.5	2685.8	2692.4	
B	249.772	105880	107295	105962	
Ba	233.527	312009	311318	312582	
Be	234.861	485004	482341	484714	

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El	Wavelen.	Replicates Intensity (c/s)		
Cd	228.802	68492	68499	68735
Co	231.160	46093	46079	46331
Cr	267.716	263692	263902	265064
Cu	324.754	321602	320387	322892
Fe	261.382	14425	14375	14439
Li	610.365	409510	408281	410997
Mn	293.305	116400	116245	116866
Ni	221.648	12155	12131	12201
Pb	220.353	13731	13722	13780
Se	196.026	2091.0	2093.7	2109.5
Sr	216.596	43176	43758	43968
Tl	190.794	3643.7	3626.5	3638.7
V	289.164	61857	61784	62120
Y	361.104	191134	190672	190417
Zn	206.200	6457.4	6462.6	6489.4
Zr	257.147	89388	89381	89945

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ag	328.068	2.0000	ppm	88.803	0.1	63037
Al	237.312	10.000	ppm	15.136	0.3	4847.5
As	188.980	10.000	ppm	11.794	0.4	2682.6
B	249.772	10.000	ppm	794.319	0.7	106379
Ba	233.527	10.000	ppm	632.868	0.2	311970
Be	234.861	10.000	ppm	1460.869	0.3	484020
Cd	228.802	10.000	ppm	138.377	0.2	68576
Co	231.160	10.000	ppm	141.492	0.3	46167
Cr	267.716	10.000	ppm	738.949	0.3	264219
Cu	324.754	10.000	ppm	1252.486	0.4	321627
Fe	261.382	10.000	ppm	33.618	0.2	14413
Li	610.365	10.000	ppm	1360.334	0.3	409596
Mn	293.305	10.000	ppm	323.291	0.3	116504
Ni	221.648	10.000	ppm	35.358	0.3	12162
Pb	220.353	10.000	ppm	31.427	0.2	13744
Se	196.026	10.000	ppm	9.969	0.5	2098.0
Sr	216.596	10.000	ppm	410.231	0.9	43634
Tl	190.794	10.000	ppm	8.855	0.2	3636.3
V	289.164	10.000	ppm	176.321	0.3	61920
Zn	206.200	10.000	ppm	17.142	0.3	6469.8
Zr	257.147	10.000	ppm	323.108	0.4	89571

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0000	190741	363.597	0.2

Standard 4 (Std) **3/28/03, 10:26:50 PM** **Rack 1, Tube 3**

El	Wavelen.	Replicates Intensity (c/s)		
Mo	202.032	6846.4	6990.6	7047.6
Sb	217.582	985.64	996.32	996.38
Si	251.611	18710	18808	19019
Sn	189.927	6088.0	6101.4	6123.1
Ti	322.284	71910	72205	72308
Y	361.104	192502	192592	193692

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Mo	202.032	2.0000	ppm	103.701	1.5	6961.5
Sb	217.582	2.0000	ppm	6.184	0.6	992.78
Si	251.611	10.000	ppm	157.919	0.8	18845
Sn	189.927	10.000	ppm	17.697	0.3	6104.1
Ti	322.284	10.000	ppm	206.634	0.3	72141

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0115	192928	662.511	0.3

Standard 3 (Std) **3/28/03, 10:30:45 PM** **Rack 1, Tube 4**

El	Wavelen.	Replicates Intensity (c/s)		
K	728.181	14761	14734	14717
Na	589.592	1337856	1336218	1336684
Na	568.821	2001.0	2036.7	2053.8
Y	361.104	192158	193153	192973

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
K	728.181	10.000	ppm	22.577	0.2	14737
Na	589.592	10.000	ppm	843.614	0.1	1336919
Na	568.821	10.000	ppm	26.919	1.3	2030.5

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0106	192762	530.237	0.3

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Std 3 10 X (Std) 3/28/03, 10:34:41 PM Rack 1, Tube 5

El	Wavelen.	Replicates Intensity (c/s)			
Ca	315.887	512752	513297	510635	
K	728.181	152447	152992	152998	
Mg	279.078	85588	85623	85340	
Na	589.592	14320109	14307603	14241573	
Na	568.821	27024	27026	26927	
Y	361.104	183335	183669	184239	

El	Wavelen.	Sol'n Conc.	Units	SD(Int)	%RSD(Int)	Int. (c/s)
Ca	315.887	100.00	ppm	1406.229	0.3	512228
K	728.181	100.00	ppm	316.857	0.2	152812
Mg	279.078	100.00	ppm	154.281	0.2	85517
Na	589.592	100.00	ppm	42198.469	0.3	14289761
Na	568.821	100.00	ppm	56.421	0.2	26992

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.96333	183748	457.012	0.2

Ag 328.068 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-15.291	0.000000	0.000000	-	-
Standard 2		63037	2.0000	2.0000	0.000000	0.0

Curve Type: Linear Equation: y = 31526.2 x + -15.2912

Al 237.312 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.018050	0.000000	0.000000	-	-
Standard 2		4847.5	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 484.745 x + 0.0180498

As 188.980 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-0.68409	0.000000	0.000000	-	-
Standard 2		2682.6	10.000	10.000	0.000001	0.0

Curve Type: Linear Equation: y = 268.324 x + -0.684086

B 249.772 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		9.7460	0.000000	0.000000	-	-
Standard 2		106379	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 10636.9 x + 9.74597

Ba 233.527 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		78.698	0.000000	0.000000	-	-
Standard 2		311970	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 31189.1 x + 78.698

Be 234.861 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-3.9303	0.000000	0.000000	-	-
Standard 2		484020	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 48402.4 x + -3.9303

Ca 315.887 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		146.76	0.000000	0.000000	-	-
Std 3 10 X		512228	100.00	100.00	0.000000	0.0

Curve Type: Linear Equation: y = 5120.81 x + 146.763

Cd 228.802 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.22675	0.000000	0.000000	-	-
Standard 2		68576	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 6857.53 x + 0.226747

Co 231.160 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		9.4913	0.000000	0.000000	-	-
Standard 2		46167	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 4615.8 x + 9.49129

Cr 267.716 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		4.4889	0.000000	0.000000	-	-
Standard 2		264219	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 26421.5 x + 4.4889

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Cu 324.754 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		110.32	0.000000	0.000000	-	-
Standard 2		321627	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 32151.7 x + 110.317

Fe 261.382 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		5.3590	0.000000	0.000000	-	-
Standard 2		14413	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 1440.74 x + 5.35896

K 728.181 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		79.940	0.000000	0.000000	-	-
Standard 3		14737	10.000	10.000	0.000000	0.0
Std 3 10 X		152812	100.00	100.00	0.000000	0.0

Curve Type: Quadratic Equation: $y = 0.68417 x^2 + 1458.91 x + 79.9403$

Li 610.365 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		813.41	0.000000	0.000000	-	-
Standard 2		409596	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 40878.3 x + 813.414

Mg 279.078 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.59256	0.000000	0.000000	-	-
Std 3 10 X		85517	100.00	100.00	0.000000	0.0

Curve Type: Linear Equation: y = 855.166 x + 0.592558

Mn 293.305 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		6.9866	0.000000	0.000000	-	-
Standard 2		116504	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 11649.7 x + 6.98665

Mo 202.032 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		7.3772	0.000000	0.000000	-	-
Standard 4		6961.5	2.0000	2.0000	0.000000	0.0

Curve Type: Linear Equation: y = 3477.07 x + 7.37721

Na 589.592 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		1224.5	0.000000	0.000000	-	-
Standard 2		1336919	10.000	10.000	0.000000	0.0
Std 3 10 X		14289761	100.00	100.00	0.000000	0.0

Curve Type: Quadratic Equation: $y = 103.51 x^2 + 132534 x + 1224.49$

Na 568.821 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-495.17	0.000000	0.89358	-	-
Standard 3		2030.5	10.000	10.000	0.000000	0.0
Std 3 10 X		26992	100.00	100.00	0.000000	0.0

Curve Type: Linear Equation: y = 277.354 x + -743.009

Ni 221.648 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-0.56845	0.000000	0.000000	-	-
Standard 2		12162	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 1216.3 x + -0.568453

Pb 220.353 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-2.8176	0.000000	0.000000	-	-
Standard 2		13744	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 1374.73 x + -2.81757

Sb 217.582 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-0.99852	0.000000	0.000000	-	-
Standard 4		992.78	2.0000	2.0000	0.000000	0.0

Curve Type: Linear Equation: y = 496.889 x + -0.998523

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Se 196.026 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.54027	0.000000	0.000000	-	-
Standard 2		2098.0	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 209.751 x + 0.540271

Si 251.611 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		28.863	0.000000	0.000000	-	-
Standard 4		18845	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 1881.65 x + 28.8627

Sn 189.927 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.11056	0.000000	0.000000	-	-
Standard 4		6104.1	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 610.403 x + 0.110556

Sr 216.596 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-0.63704	0.000000	0.000000	-	-
Standard 2		43634	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 4363.43 x + -0.637041

Ti 322.284 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		82.797	0.000000	0.000000	-	-
Standard 4		72141	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 7205.81 x + 82.7972

Tl 190.794 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		-0.91659	0.000000	0.000000	-	-
Standard 2		3636.3	10.000	10.000	0.000001	0.0

Curve Type: Linear Equation: y = 363.723 x + -0.91659

V 289.164 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		0.10404	0.000000	0.000000	-	-
Standard 2		61920	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 6192.01 x + 0.104044

Zn 206.200 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		1.2725	0.000000	0.000000	-	-
Standard 2		6469.8	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 646.852 x + 1.27246

Zr 257.147 Calibration (ppm) 3/28/03, 10:34:41 PM Correlation Coefficient: 1.000000

Label	Flags	Int. (c/s)	Std Conc.	Calc Conc.	Error	%Error
Blank		14.300	0.000000	0.000000	-	-
Standard 2		89571	10.000	10.000	0.000000	0.0

Curve Type: Linear Equation: y = 8955.71 x + 14.3003

CCV (CCV) 3/28/03, 10:38:37 PM Rack 1, Tube 6

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	31709	31783	31719	
Al	237.312	2498.7	2512.7	2511.5	
As	188.980	1356.5	1354.0	1351.0	
B	249.772	21098	21164	21149	
Ba	233.527	157717	157923	157572	
Be	234.861	244990	244249	243595	
Ca	315.887	259433	259566	258774	
Cd	228.802	34409	34531	34469	
Co	231.160	23146	23111	23100	
Cr	267.716	132587	132827	132486	
Cu	324.754	163377	162570	162410	
Fe	261.382	7253.9	7251.8	7233.7	
K	728.181	77633	77672	77339	
Li	610.365	204052	203431	202957	
Mg	279.078	42281	42236	42207	
Mn	293.305	58813	58866	58702	
Mo	202.032	3505.8	3556.3	3577.5	
Na	589.592	7225629	7244575	7241886	
Na	568.821	12708	12771	12746	
Ni	221.648	6145.8	6159.5	6139.2	
Pb	220.353	6883.6	6885.0	6886.4	
Sb	217.582	508.23	510.33	508.13	
Se	196.026	1046.5	1061.9	1067.5	
Si	251.611	9633.8	9691.2	9719.7	

El	Wavelen.	Replicates Intensity (c/s)		
Sn	189.927	3051.7	3070.3	3052.4
Sr	216.596	21841	22028	22003
Ti	322.284	36408	36488	36140
Tl	190.794	1762.1	1782.9	1786.5
V	289.164	31679	31707	31623
Y	361.104	184607	185764	186679
Zn	206.200	3257.6	3272.9	3249.9
Zr	257.147	45183	45574	45573

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.99474	ppm	0.001269	0.1	31737	0.99474 ppm	Y 361.104	99.47449
Al	237.312	5.1372	ppm	0.015940	0.3	2507.6	5.1372 ppm	Y 361.104	102.74420
As	188.980	5.0466	ppm	0.010222	0.2	1353.8	5.0466 ppm	Y 361.104	100.93251
B	249.772	1.9886	ppm	0.003278	0.2	21137	1.9886 ppm	Y 361.104	99.43130
Ba	233.527	5.0543	ppm	0.005667	0.1	157737	5.0543 ppm	Y 361.104	101.08582
Be	234.861	5.0476	ppm	0.014423	0.3	244278	5.0476 ppm	Y 361.104	100.95258
Ca	315.887	50.615	ppm	0.082841	0.2	259257	50.615 ppm	Y 361.104	101.22984
Cd	228.802	5.0307	ppm	0.008895	0.2	34470	5.0307 ppm	Y 361.104	100.61471
Co	231.160	5.0110	ppm	0.005198	0.1	23119	5.0110 ppm	Y 361.104	100.22028
Cr	267.716	5.0197	ppm	0.006628	0.1	132633	5.0197 ppm	Y 361.104	100.39474
Cu	324.754	5.0623	ppm	0.016128	0.3	162786	5.0623 ppm	Y 361.104	101.24633
Fe	261.382	5.0544	ppm	0.007742	0.2	7246.5	5.0544 ppm	Y 361.104	101.08798
K	728.181	51.826	ppm	0.11907	0.2	77548	51.826 ppm	Y 361.104	103.65170
Li	610.365	4.9721	ppm	0.013433	0.3	203480	4.9721 ppm	Y 361.104	99.44156
Mg	279.078	49.395	ppm	0.043128	0.1	42241	49.395 ppm	Y 361.104	98.78959
Mn	293.305	5.0462	ppm	0.007178	0.1	58793	5.0462 ppm	Y 361.104	100.92377
Mo	202.032	1.0178	ppm	0.010595	1.0	3546.5	1.0178 ppm	Y 361.104	101.78479
Na	589.592	52.425	ppm	0.071488	0.1	7237364	52.425 ppm	Y 361.104	104.85059
Ni	221.648	5.0503	ppm	0.008520	0.2	6148.2	5.0503 ppm	Y 361.104	101.00532
Pb	220.353	5.0121	ppm	0.001029	0.0	6885.0	5.0121 ppm	Y 361.104	100.24133
Sb	217.582	1.0330	ppm	0.002509	0.2	508.90	1.0330 ppm	Y 361.104	103.29942
Se	196.026	5.0446	ppm	0.051857	1.0	1058.6	5.0446 ppm	Y 361.104	100.89198
Si	251.611	5.1299	ppm	0.023259	0.5	9681.6	5.1299 ppm	Y 361.104	102.59853
Sn	189.927	5.0079	ppm	0.017301	0.3	3058.2	5.0079 ppm	Y 361.104	100.15771
Sr	216.596	5.0308	ppm	0.023137	0.5	21957	5.0308 ppm	Y 361.104	100.61661
Ti	322.284	5.0309	ppm	0.025272	0.5	36345	5.0309 ppm	Y 361.104	100.61760
Tl	190.794	4.8586	ppm	0.036221	0.7	1777.2	4.8586 ppm	Y 361.104	97.17294
V	289.164	5.1305	ppm	0.006925	0.1	31670	5.1305 ppm	Y 361.104	102.61027
Zn	206.200	5.0284	ppm	0.018135	0.4	3260.1	5.0284 ppm	Y 361.104	100.56880

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Zr	257.147	5.0744	ppm	0.025190	0.5	45443	5.0744 ppm	Y 361.104	101.48856

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.97348	185683	1038.413	0.6

BLA01 (CCB) **3/28/03, 10:42:31 PM** **Rack 1, Tube 7**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-7.5662	-13.071	-13.935
Al	237.312	0.88924	-1.2539	2.7547
As	188.980	0.18864	2.6841	0.92139
B	249.772	37.287	31.312	30.870
Ba	233.527	79.139	81.686	83.129
Be	234.861	1.7386	-2.0097	-1.9336
Ca	315.887	216.13	215.75	215.25
Cd	228.802	-0.81049	-2.8615	0.32709
Co	231.160	7.9628	10.106	10.699
Cr	267.716	9.1650	7.2166	5.6387
Cu	324.754	105.75	101.03	106.84
Fe	261.382	7.5716	10.015	10.793
K	728.181	121.49	136.69	129.33
Li	610.365	789.05	809.71	778.98
Mg	279.078	5.9126	8.7806	8.7581
Mn	293.305	5.8996	10.120	4.6032
Mo	202.032	28.198	26.728	27.132
Na	589.592	4629.8	4684.3	4658.2
Na	568.821	-471.34	-493.98	-501.24
Ni	221.648	-3.4414	-1.9200	-1.5671
Pb	220.353	-4.1280	-1.9587	2.3527
Sb	217.582	-1.4264	-6.5184	-1.7870
Se	196.026	2.3615	1.7685	0.46474
Si	251.611	33.140	27.275	30.153
Sn	189.927	1.8043	-1.5701	2.4569
Sr	216.596	0.59624	-1.5984	1.5141
Ti	322.284	86.226	86.094	87.753
Tl	190.794	5.0009	3.7889	1.6185
V	289.164	0.29175	-2.0791	-4.7424
Y	361.104	194555	192846	194056
Zn	206.200	1.5477	2.8671	2.9936
Zr	257.147	10.996	9.8589	10.936

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El	Wavelen.	Soln Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.000120	ppm	0.000110	91.0	-11.524	0.000120 ppm	Y 361.104	0.00012
Al	237.312	0.001618u	ppm	0.004148	256.3	0.80002	0.001618 ppm	Y 361.104	0.00162
As	188.980	0.007260	ppm	0.004780	65.8	1.2647	0.007260 ppm	Y 361.104	0.00726
B	249.772	0.002199	ppm	0.000337	15.3	33.157	0.002199 ppm	Y 361.104	0.00220
Ba	233.527	0.000084	ppm	0.000065	77.0	81.318	0.000084 ppm	Y 361.104	0.00008
Be	234.861	0.000065	ppm	0.000044	67.8	-0.73489	0.000065 ppm	Y 361.104	0.00007
Ca	315.887	0.013464	ppm	0.000087	0.6	215.71	0.013464 ppm	Y 361.104	0.01346
Cd	228.802	-0.000191u	ppm	0.000236	123.2	-1.1150	-0.000191 ppm	Y 361.104	-0.00019
Co	231.160	0.000047u	ppm	0.000312	662.9	9.5890	0.000047 ppm	Y 361.104	0.00005
Cr	267.716	0.000108	ppm	0.000067	61.9	7.3401	0.000108 ppm	Y 361.104	0.00011
Cu	324.754	-0.000182u	ppm	0.000096	52.7	104.54	-0.000182 ppm	Y 361.104	-0.00018
Fe	261.382	0.002839	ppm	0.001167	41.1	9.4601	0.002839 ppm	Y 361.104	0.00284
K	728.181	0.033745	ppm	0.005211	15.4	129.17	0.033745 ppm	Y 361.104	0.03374
Li	610.365	-0.000527u	ppm	0.000383	72.7	792.58	-0.000527 ppm	Y 361.104	-0.00053
Mg	279.078	0.008448	ppm	0.001929	22.8	7.8171	0.008448 ppm	Y 361.104	0.00845
Mn	293.305	-0.000010u	ppm	0.000248	2567.3	6.8743	-0.000010 ppm	Y 361.104	-0.00001
Mo	202.032	0.005745	ppm	0.000218	3.8	27.353	0.005745 ppm	Y 361.104	0.00574
Na	589.592	0.025906	ppm	0.000205	0.8	4657.4	0.025906 ppm	Y 361.104	0.02591
Ni	221.648	-0.001430u	ppm	0.000819	57.2	-2.3095	-0.001430 ppm	Y 361.104	-0.00143
Pb	220.353	0.001159u	ppm	0.002400	207.0	-1.2446	0.001159 ppm	Y 361.104	0.00116
Sb	217.582	-0.004520u	ppm	0.005719	126.5	-3.2440	-0.004520 ppm	Y 361.104	-0.00452
Se	196.026	0.004726u	ppm	0.004626	97.9	1.5316	0.004726 ppm	Y 361.104	0.00473
Si	251.611	0.000705u	ppm	0.001559	221.1	30.189	0.000705 ppm	Y 361.104	0.00070
Sn	189.927	0.001289u	ppm	0.003541	274.6	0.89704	0.001289 ppm	Y 361.104	0.00129
Sr	216.596	0.000186u	ppm	0.000367	197.2	0.17065	0.000186 ppm	Y 361.104	0.00019
Ti	322.284	0.000532	ppm	0.000128	24.0	86.691	0.000532 ppm	Y 361.104	0.00053
Tl	190.794	0.012081	ppm	0.004712	39.0	3.4694	0.012081 ppm	Y 361.104	0.01208Z
V	289.164	-0.000364u	ppm	0.000407	111.6	-2.1766	-0.000364 ppm	Y 361.104	-0.00036
Zn	206.200	0.001848	ppm	0.001238	67.0	2.4694	0.001848 ppm	Y 361.104	0.00185
Zr	257.147	-0.000415u	ppm	0.000071	17.2	10.597	-0.000415 ppm	Y 361.104	-0.00041

El	Wavelen.	Ratio	Int. (c/s)	SD(int)	%RSD
Y	361.104	1.0161	193819	879.177	0.5

ICV01-19 (ICV) 3/28/03, 10:46:27 PM Rack 1, Tube 8

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	36.534	40.515	28.860	
Al	237.312	2.3917	-3.8527	5.9496	
As	188.980	263.97	264.20	262.64	

El	Wavelen.	Replicates Intensity (c/s)			
B	249.772	29.622	29.361	27.017	
Ba	233.527	96.969	100.57	102.76	
Be	234.861	49074	48293	49574	
Ca	315.887	6245.5	6226.4	6248.1	
Cd	228.802	7143.3	7154.7	7179.6	
Co	231.160	4917.0	4907.4	4922.6	
Cr	267.716	27645	27676	27731	
Cu	324.754	33734	33527	33892	
Fe	261.382	1508.5	1517.1	1516.6	
K	728.181	157.51	150.44	140.35	
Li	610.365	40701	40631	40738	
Mg	279.078	921.49	922.67	923.49	
Mn	293.305	12099	12091	12121	
Mo	202.032	3550.2	3600.3	3646.8	
Na	589.592	16755	16789	16764	
Na	568.821	-451.91	-431.02	-461.54	
Ni	221.648	1273.1	1271.4	1271.7	
Pb	220.353	1431.9	1427.7	1428.3	
Sb	217.582	507.18	503.75	513.18	
Se	196.026	206.18	208.94	215.48	
Si	251.611	161.41	159.80	161.11	
Sn	189.927	-1.0817	1.6702	1.7690	
Sr	216.596	4549.8	4579.9	4594.7	
Ti	322.284	7382.9	7383.6	7411.4	
Tl	190.794	372.82	375.38	383.40	
V	289.164	6477.3	6475.7	6504.4	
Y	361.104	191280	192656	192109	
Zn	206.200	690.17	693.30	687.13	
Zr	257.147	8782.4	8898.4	8980.7	

El	Wavelen.	Soln Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000809	ppm	0.000188	23.2	35.303	-0.000809 ppm	Y 361.104	-
Al	237.312	-0.000584u	ppm	0.010237	1753.4	1.4962	-0.000584 ppm	Y 361.104	-
As	188.980	0.98447	ppm	0.003145	0.3	263.60	0.98447 ppm	Y 361.104	98.44679
B	249.772	0.002274	ppm	0.000135	5.9	28.667	0.002274 ppm	Y 361.104	-
Ba	233.527	0.000557	ppm	0.000094	16.8	100.10	0.000557 ppm	Y 361.104	-
Be	234.861	1.0122	ppm	0.013340	1.3	48980	1.0122 ppm	Y 361.104	101.21687
Ca	315.887	1.1928	ppm	0.002323	0.2	6240.0	1.1928 ppm	Y 361.104	119.28255Q
Cd	228.802	1.0448	ppm	0.002707	0.3	7159.2	1.0448 ppm	Y 361.104	104.47620

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Co	231.160	1.0595	ppm	0.001666	0.2	4915.6	1.0595 ppm	Y 361.104	105.94661
Cr	267.716	1.0476	ppm	0.001640	0.2	27684	1.0476 ppm	Y 361.104	104.76035
Cu	324.754	1.0457	ppm	0.005691	0.5	33718	1.0457 ppm	Y 361.104	104.56840
Fe	261.382	1.0531	ppm	0.003361	0.3	1514.1	1.0531 ppm	Y 361.104	105.31419
K	728.181	0.044738	ppm	0.005912	13.2	149.44	0.044738 ppm	Y 361.104	-
Li	610.365	0.97581	ppm	0.001332	0.1	40690	0.97581 ppm	Y 361.104	97.58092
Mg	279.078	1.0784	ppm	0.001176	0.1	922.55	1.0784 ppm	Y 361.104	107.84414
Mn	293.305	1.0384	ppm	0.001340	0.1	12104	1.0384 ppm	Y 361.104	103.83795
Mo	202.032	1.0330	ppm	0.013898	1.3	3599.1	1.0330 ppm	Y 361.104	103.29732
Na	589.592	0.11728	ppm	0.000130	0.1	16769	0.11728 ppm	Y 361.104	-
Ni	221.648	1.0469	ppm	0.000721	0.1	1272.1	1.0469 ppm	Y 361.104	104.68830
Pb	220.353	1.0440	ppm	0.001630	0.2	1429.3	1.0440 ppm	Y 361.104	104.40398
Sb	217.582	1.0259	ppm	0.009609	0.9	508.03	1.0259 ppm	Y 361.104	102.58529
Se	196.026	0.99956	ppm	0.022766	2.3	210.20	0.99956 ppm	Y 361.104	99.95567
Si	251.611	0.070172	ppm	0.000455	0.6	160.77	0.070172 ppm	Y 361.104	-
Sn	189.927	0.000721u	ppm	0.002651	367.8	0.78586	0.000721 ppm	Y 361.104	-
Sr	216.596	1.0483	ppm	0.005252	0.5	4574.8	1.0483 ppm	Y 361.104	104.82974
Ti	322.284	1.0132	ppm	0.002252	0.2	7392.6	1.0132 ppm	Y 361.104	101.32410
Tl	190.794	1.0347	ppm	0.015184	1.5	377.20	1.0347 ppm	Y 361.104	103.46639
V	289.164	1.0513	ppm	0.002602	0.2	6485.8	1.0513 ppm	Y 361.104	105.13427
Zn	206.200	1.0627	ppm	0.004770	0.4	690.20	1.0627 ppm	Y 361.104	106.27469
Zr	257.147	0.99140	ppm	0.011124	1.1	8887.1	0.99140 ppm	Y 361.104	99.14046

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0067	192015	693.170	0.4

ICV01-07 (ICV) **3/28/03, 10:50:22 PM** **Rack 1, Tube 9**

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	15537	15455	15436	
Al	237.312	507.49	501.01	499.28	
As	188.980	-0.12840	-0.23688	0.61279	
B	249.772	10445	10491	10495	
Ba	233.527	32091	31792	31936	
Be	234.861	0.75100	4.6854	1.0462	
Ca	315.887	442.33	445.00	445.88	
Cd	228.802	0.38658	4.7876	-0.64422	
Co	231.160	8.3855	11.214	12.176	
Cr	267.716	9.8499	19.756	14.334	
Cu	324.754	113.57	134.92	130.24	

El	Wavelen.	Replicates Intensity (c/s)			
Fe	261.382	16.656	18.675	19.156	
K	728.181	13846	13847	13904	
Li	610.365	789.23	763.89	756.11	
Mg	279.078	24.579	26.143	27.974	
Mn	293.305	9.7318	8.0845	13.520	
Mo	202.032	47.907	39.653	31.811	
Na	589.592	139052	139155	139068	
Na	568.821	-222.74	-204.80	-201.48	
Ni	721.648	14.037	14.555	13.500	
Pb	220.353	0.40660	-0.40987	-0.78709	
Sb	217.582	-1.1953	-0.66111	-2.2048	
Se	196.026	1.4222	2.5278	3.3911	
Si	251.611	9368.9	9413.6	9439.7	
Sn	189.927	1232.8	1243.3	1251.7	
Sr	216.596	3.2709	2.3219	2.8318	
Ti	322.284	82.699	88.257	83.590	
Tl	190.794	3.1792	3.3942	2.8281	
V	289.164	2.0140	-1.3542	1.8272	
Y	361.104	193584	194214	193770	
Zn	206.200	2.2173	3.2108	2.0252	
Zr	257.147	951.32	635.26	490.89	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.49119	ppm	0.001703	0.3	15476	0.49119 ppm	Y 361.104	98.23838
Al	237.312	1.0330	ppm	0.008932	0.9	502.60	1.0330 ppm	Y 361.104	103.29969
As	188.980	0.002792	ppm	0.001723	61.7	0.082505	0.002792 ppm	Y 361.104	-
B	249.772	0.98407	ppm	0.002627	0.3	10477	0.98407 ppm	Y 361.104	98.40738
Ba	233.527	1.0215	ppm	0.004799	0.5	31940	1.0215 ppm	Y 361.104	102.15405
Be	234.861	0.000126	ppm	0.000045	35.9	2.1608	0.000126 ppm	Y 361.104	-
Ca	315.887	0.058322	ppm	0.000361	0.6	444.41	0.058322 ppm	Y 361.104	-
Cd	228.802	0.000187u	ppm	0.000421	225.3	1.5100	0.000187 ppm	Y 361.104	-
Co	231.160	0.000218u	ppm	0.000427	195.4	10.592	0.000218 ppm	Y 361.104	-
Cr	267.716	0.000384	ppm	0.000188	48.8	14.647	0.000384 ppm	Y 361.104	-
Cu	324.754	0.000493	ppm	0.000349	70.8	126.25	0.000493 ppm	Y 361.104	-
Fe	261.382	0.008883	ppm	0.000921	10.4	18.163	0.008883 ppm	Y 361.104	-
K	728.181	9.4076	ppm	0.022647	0.2	13865	9.4076 ppm	Y 361.104	94.07647
Li	610.365	-0.001073u	ppm	0.000424	39.5	769.74	-0.001073 ppm	Y 361.104	-
Mg	279.078	0.029982	ppm	0.001987	6.6	26.232	0.029982 ppm	Y 361.104	-
Mn	293.305	0.000297	ppm	0.000239	80.6	10.445	0.000297 ppm	Y 361.104	-

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Mo	202.032	0.009322	ppm	0.002315	24.8	39.791	0.009322 ppm	Y 361.104	-
Na	589.592	1.0345	ppm	0.000421	0.0	139092	1.0345 ppm	Y 361.104	103.44673
Ni	221.648	0.004090	ppm	0.000434	10.6	14.031	0.004090 ppm	Y 361.104	-
Pb	220.353	0.001694	ppm	0.000444	26.2	-0.26345	0.001694 ppm	Y 361.104	-
Sb	217.582	-0.000703u	ppm	0.001578	224.3	-1.3537	-0.000703 ppm	Y 361.104	-
Se	196.026	0.009082	ppm	0.004705	51.8	2.4470	0.009082 ppm	Y 361.104	-
Si	251.611	4.9842	ppm	0.019021	0.4	9407.4	4.9842 ppm	Y 361.104	99.68422
Sn	189.927	2.0355	ppm	0.015497	0.8	1242.6	2.0355 ppm	Y 361.104	101.77679
Sr	216.596	0.000788	ppm	0.000109	13.8	2.8082	0.000788 ppm	Y 361.104	-
Ti	322.284	0.000256u	ppm	0.000414	161.6	84.849	0.000256 ppm	Y 361.104	-
Tl	190.794	0.011237	ppm	0.000786	7.0	3.1338	0.011237 ppm	Y 361.104	-
V	289.164	0.000036u	ppm	0.000306	851.1	0.82900	0.000036 ppm	Y 361.104	-
Zn	206.200	0.001869	ppm	0.000984	52.6	2.4844	0.001869 ppm	Y 361.104	-
Zr	257.147	0.075120	ppm	0.026295	35.0	692.49	0.075120 ppm	Y 361.104	-

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0163	193856	323.513	0.2

ICV01-31 (ICV) 3/28/03, 10:54:16 PM Rack 1, Tube 10

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-5.9173	-16.797	-20.915	
Al	237.312	1.9837	0.68638	-0.32955	
As	188.980	-0.51646	0.47731	1.4998	
B	249.772	25.370	21.355	24.334	
Ba	233.527	80.571	81.400	83.581	
Be	234.861	-3.1809	1.2057	3.6499	
Ca	315.887	102549	102905	102558	
Cd	228.802	0.043690	-0.45600	-0.75947	
Co	231.160	8.3379	9.3123	10.704	
Cr	267.716	10.307	10.616	8.2160	
Cu	324.754	110.02	116.46	104.24	
Fe	261.382	3.5674	8.1927	2.7438	
K	728.181	29147	29246	29134	
Li	610.365	471.59	470.16	473.38	
Mg	279.078	16956	17012	16982	
Mn	293.305	3.3047	10.813	8.2387	
Mo	202.032	10.874	11.744	9.5851	
Na	589.592	2794240	2805108	2796557	
Na	568.821	4591.2	4608.7	4594.8	

El	Wavelen.	Replicates Intensity (c/s)			
Ni	221.648	-0.47221	0.51739	-0.61562	
Pb	220.353	-0.43657	-2.9432	0.94660	
Sb	217.582	-4.5124	-1.0337	-2.3320	
Se	196.026	1.1808	-2.3087	0.89150	
Si	251.611	48.151	48.727	45.740	
Sn	189.927	1.5660	1.4243	-0.57192	
Sr	216.596	3.7984	4.7988	5.0692	
Ti	322.284	91.801	89.870	88.269	
Tl	190.794	-0.73591	1.1843	1.7726	
V	289.164	-10.029	-5.2979	1.7191	
Y	361.104	190290	190419	191071	
Zn	206.200	3.7764	2.7369	2.8667	
Zr	257.147	11.847	9.5546	8.3902	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.000024u	ppm	0.000246	1012.2	-14.543	0.000024 ppm	Y 361.104	-
Al	237.312	0.001577u	ppm	0.002392	151.7	0.78019	0.001577 ppm	Y 361.104	-
As	188.980	0.004363	ppm	0.003757	86.1	0.48689	0.004363 ppm	Y 361.104	-
B	249.772	0.001308	ppm	0.000196	15.0	23.686	0.001308 ppm	Y 361.104	-
Ba	233.527	0.000101	ppm	0.000050	49.2	81.851	0.000101 ppm	Y 361.104	-
Be	234.861	0.000092	ppm	0.000072	78.1	0.55823	0.000092 ppm	Y 361.104	-
Ca	315.887	20.021	ppm	0.039604	0.2	102671	20.021 ppm	Y 361.104	100.10517
Cd	228.802	-0.000088u	ppm	0.000059	66.9	-0.39059	-0.000088 ppm	Y 361.104	-
Co	231.160	-0.000036u	ppm	0.000258	725.2	9.4512	-0.000036 ppm	Y 361.104	-
Cr	267.716	0.000198	ppm	0.000049	25.0	9.7131	0.000198 ppm	Y 361.104	-
Cu	324.754	-0.000004u	ppm	0.000190	4496.2	110.24	-0.000004 ppm	Y 361.104	-
Fe	261.382	-0.000370u	ppm	0.002039	551.3	4.8346	-0.000370 ppm	Y 361.104	-
K	728.181	19.760	ppm	0.041327	0.2	29176	19.760 ppm	Y 361.104	98.80223
Li	610.365	-0.002722u	ppm	0.000039	1.4	471.71	-0.002722 ppm	Y 361.104	-
Mg	279.078	19.859	ppm	0.033201	0.2	16984	19.859 ppm	Y 361.104	99.29603
Mn	293.305	0.000040u	ppm	0.000328	819.6	7.4522	0.000040 ppm	Y 361.104	-
Mo	202.032	0.000966	ppm	0.000312	32.4	10.734	0.000966 ppm	Y 361.104	-
Na	589.592	20.770	ppm	0.041834	0.2	2798635	20.770 ppm	Y 361.104	103.85066
Ni	221.648	0.000297u	ppm	0.000507	170.6	-0.19015	0.000297 ppm	Y 361.104	-
Pb	220.353	0.001465u	ppm	0.001434	97.9	-0.81107	0.001465 ppm	Y 361.104	-
Sb	217.582	-0.003275u	ppm	0.003538	108.0	-2.6260	-0.003275 ppm	Y 361.104	-
Se	196.026	-0.002951u	ppm	0.009232	312.8	-0.078802	-0.002951 ppm	Y 361.104	-
Si	251.611	0.009926	ppm	0.000842	8.5	47.539	0.009926 ppm	Y 361.104	-
Sn	189.927	0.001140u	ppm	0.001959	171.8	0.80613	0.001140 ppm	Y 361.104	-

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Sr	216.596	0.001191	ppm	0.000153	12.9	4.5555	0.001191 ppm	Y 361.104	-
Ti	322.284	0.000994	ppm	0.000245	24.7	89.980	0.000994 ppm	Y 361.104	-
Tl	190.794	0.004570	ppm	0.003607	78.9	0.74033	0.004570 ppm	Y 361.104	-
V	289.164	-0.000748u	ppm	0.000955	127.6	-4.5358	-0.000748 ppm	Y 361.104	-
Zn	206.200	0.002865	ppm	0.000876	30.6	3.1266	0.002865 ppm	Y 361.104	-
Zr	257.147	-0.000488u	ppm	0.000196	40.2	9.9307	-0.000488 ppm	Y 361.104	-

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.99922	190593	418.526	0.2

BLA01 (CCB) **3/28/03, 10:58:09 PM** **Rack 1, Tube 11**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-9.9610	-23.467	-19.117
Al	237.312	-6.4287	4.9544	-2.2168
As	188.980	-1.0287	0.93554	0.082900
B	249.772	14.011	17.675	14.757
Ba	233.527	82.038	80.529	80.637
Be	234.861	-2.9518	-4.1445	-4.0952
Ca	315.887	147.14	145.14	138.75
Cd	228.802	-3.0262	-0.42680	-1.1252
Co	231.160	8.0112	9.3587	7.2966
Cr	267.716	0.91287	6.2375	0.64513
Cu	324.754	108.10	103.69	98.407
Fe	261.382	7.6923	5.8458	8.7402
K	728.181	119.15	106.51	125.21
Li	610.365	772.86	764.03	761.14
Mg	279.078	0.59809	2.4751	0.36922
Mn	293.305	1.9049	-1.5468	2.8273
Mo	202.032	7.9042	7.8564	8.1023
Na	589.592	1137.2	1120.6	1127.5
Na	568.821	-481.19	-485.42	-473.89
Ni	221.648	-1.8289	-1.6839	0.19224
Pb	220.353	-0.43160	1.4932	-1.8254
Sb	217.582	-2.0924	-4.0675	-1.1326
Se	196.026	1.5092	0.71469	1.0792
Si	251.611	29.849	28.451	28.789
Sn	189.927	-0.36185	-0.20581	0.017752
Sr	216.596	-0.72807	-0.11027	1.2501
Ti	322.284	84.819	82.374	78.174

El	Wavelen.	Replicates Intensity (c/s)		
Tl	190.794	-0.10528	0.74087	-0.62729
V	289.164	0.89189	-1.5690	-2.5294
Y	361.104	191358	191854	193130
Zn	206.200	3.2551	2.1490	-0.49037
Zr	257.147	7.5514	5.6949	10.081

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000069u	ppm	0.000219	319.0	-17.515	-0.000069 ppm	Y 361.104	-0.00007
Al	237.312	-0.002569u	ppm	0.011873	462.2	-1.2303	-0.002569 ppm	Y 361.104	-0.00257
As	188.980	0.002536u	ppm	0.003671	144.8	-0.003433	0.002536 ppm	Y 361.104	0.00254
B	249.772	0.000537	ppm	0.000182	33.9	15.481	0.000537 ppm	Y 361.104	0.00054
Ba	233.527	0.000076	ppm	0.000027	35.5	81.068	0.000076 ppm	Y 361.104	0.00008
Be	234.861	0.000003u	ppm	0.000014	440.8	-3.7305	0.000003 ppm	Y 361.104	0.00000
Ca	315.887	-0.000603u	ppm	0.000855	141.9	143.68	-0.000603 ppm	Y 361.104	-0.00060
Cd	228.802	-0.000256u	ppm	0.000196	76.7	-1.5261	-0.000256 ppm	Y 361.104	-0.00026
Co	231.160	-0.000258u	ppm	0.000227	87.9	8.2222	-0.000258 ppm	Y 361.104	-0.00026
Cr	267.716	-0.000072u	ppm	0.000119	166.9	2.5985	-0.000072 ppm	Y 361.104	-0.00007
Cu	324.754	-0.000217u	ppm	0.000151	69.6	103.40	-0.000217 ppm	Y 361.104	-0.00022
Fe	261.382	0.001429	ppm	0.001017	71.2	7.4261	0.001429 ppm	Y 361.104	0.00143
K	728.181	0.025380	ppm	0.006541	25.8	116.96	0.025380 ppm	Y 361.104	0.02538
Li	610.365	-0.001181u	ppm	0.000149	12.6	766.01	-0.001181 ppm	Y 361.104	-0.00118
Mg	279.078	0.000649u	ppm	0.001351	208.1	1.1475	0.000649 ppm	Y 361.104	0.00065
Mn	293.305	-0.000509u	ppm	0.000198	38.9	1.0618	-0.000509 ppm	Y 361.104	-0.00051
Mo	202.032	0.000166	ppm	0.000037	22.6	7.9543	0.000166 ppm	Y 361.104	0.00017
Na	589.592	-0.000721u	ppm	0.000063	8.7	1128.4	-0.000721 ppm	Y 361.104	-0.00072
Ni	221.648	-0.000441u	ppm	0.000927	210.3	-1.1069	-0.000441 ppm	Y 361.104	-0.00044
Pb	220.353	0.001869	ppm	0.001212	64.9	-0.25459	0.001869 ppm	Y 361.104	0.00187
Sb	217.582	-0.002883u	ppm	0.003012	104.5	-2.4308	-0.002883 ppm	Y 361.104	-0.00288
Se	196.026	0.002673	ppm	0.001896	70.9	1.1010	0.002673 ppm	Y 361.104	0.00267
Si	251.611	0.000088u	ppm	0.000388	438.6	29.030	0.000088 ppm	Y 361.104	0.00009
Sn	189.927	-0.000480u	ppm	0.000313	65.1	-0.18330	-0.000480 ppm	Y 361.104	-0.00048
Sr	216.596	0.000178u	ppm	0.000232	130.1	0.13727	0.000178 ppm	Y 361.104	0.00018
Ti	322.284	-0.000142u	ppm	0.000466	328.2	81.789	-0.000142 ppm	Y 361.104	-0.00014
Tl	190.794	0.002542	ppm	0.001898	74.7	0.002766	0.002542 ppm	Y 361.104	0.00254
V	289.164	-0.000190u	ppm	0.000285	149.9	-1.0688	-0.000190 ppm	Y 361.104	-0.00019
Zn	206.200	0.000564u	ppm	0.002975	527.2	1.6379	0.000564 ppm	Y 361.104	0.00056
Zr	257.147	-0.000730u	ppm	0.000246	33.7	7.7756	-0.000730 ppm	Y 361.104	-0.00073

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El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0072	192114	914.010	0.5

DLS (CRI) 3/28/03, 11:02:02 PM Rack 1, Tube 12

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	302.23	292.08	303.99	
Al	237.312	27.624	24.971	26.525	
As	188.980	13.651	15.785	13.458	
B	249.772	537.79	540.35	540.72	
Ba	233.527	401.31	407.31	405.71	
Be	234.861	187.46	191.95	189.79	
Ca	315.887	734.19	740.52	737.95	
Cd	228.802	32.523	37.774	35.342	
Co	231.160	60.453	57.493	57.684	
Cr	267.716	275.29	280.73	279.50	
Cu	324.754	774.39	775.34	781.67	
Fe	261.382	45.223	46.822	49.893	
K	728.181	247.72	259.41	270.30	
Li	610.365	1151.3	1161.4	1158.5	
Mg	279.078	93.051	90.523	88.394	
Mn	293.305	128.93	121.90	126.25	
Mo	202.032	40.919	37.587	36.777	
Na	589.592	15945	15892	15920	
Na	568.821	-436.20	-434.90	-459.18	
Ni	221.648	12.948	12.205	12.085	
Pb	220.353	12.764	13.795	12.499	
Sb	217.582	2.3775	3.5424	3.0143	
Se	196.026	0.60379	2.9124	1.2147	
Si	251.611	472.47	472.50	472.47	
Sn	189.927	32.113	31.130	30.148	
Sr	216.596	45.769	47.506	44.313	
Ti	322.284	155.25	155.39	152.51	
Tl	190.794	4.7466	2.7379	2.3468	
V	289.164	69.915	59.116	66.687	
Y	361.104	193486	193363	193678	
Zn	206.200	14.601	14.622	16.585	
Zr	257.147	89.135	93.609	96.570	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.009962	ppm	0.000204	2.0	299.43	0.009962 ppm	Y 361.104	99.61678
Al	237.312	0.054306	ppm	0.002750	5.1	26.373	0.054306 ppm	Y 361.104	108.61269
As	188.980	0.055829	ppm	0.004814	8.6	14.298	0.055829 ppm	Y 361.104	111.65874
B	249.772	0.049823	ppm	0.000150	0.3	539.62	0.049823 ppm	Y 361.104	99.64632
Ba	233.527	0.010454	ppm	0.000100	1.0	404.78	0.010454 ppm	Y 361.104	104.53648
Be	234.861	0.004004	ppm	0.000046	1.2	189.73	0.004004 ppm	Y 361.104	-
Ca	315.887	0.11537	ppm	0.000622	0.5	737.55	0.11537 ppm	Y 361.104	115.37080
Cd	228.802	0.005152	ppm	0.000383	7.4	35.213	0.005152 ppm	Y 361.104	-
Co	231.160	0.010591	ppm	0.000359	3.4	58.543	0.010591 ppm	Y 361.104	105.90785
Cr	267.716	0.010371	ppm	0.000108	1.0	278.51	0.010371 ppm	Y 361.104	103.71086
Cu	324.754	0.020744	ppm	0.000123	0.6	777.13	0.020744 ppm	Y 361.104	103.72098
Fe	261.382	0.029170	ppm	0.001647	5.6	47.313	0.029170 ppm	Y 361.104	116.67956
K	728.181	0.12280	ppm	0.007739	6.3	259.14	0.12280 ppm	Y 361.104	122.80325
Li	610.365	0.008418	ppm	0.000128	1.5	1157.1	0.008418 ppm	Y 361.104	84.17824
Mg	279.078	0.10532	ppm	0.002726	2.6	90.656	0.10532 ppm	Y 361.104	105.31700
Mn	293.305	0.010190	ppm	0.000304	3.0	125.69	0.010190 ppm	Y 361.104	101.89810
Mo	202.032	0.008930	ppm	0.000631	7.1	38.427	0.008930 ppm	Y 361.104	89.29951
Na	589.592	0.11082	ppm	0.000202	0.2	15919	0.11082 ppm	Y 361.104	110.81772
Ni	221.648	0.010309	ppm	0.000385	3.7	12.413	0.010309 ppm	Y 361.104	103.08603
Pb	220.353	0.011534	ppm	0.000498	4.3	13.019	0.011534 ppm	Y 361.104	115.34164
Sb	217.582	0.008019	ppm	0.001174	14.6	2.9781	0.008019 ppm	Y 361.104	80.18528
Se	196.026	0.004942	ppm	0.005703	115.4	1.5770	0.004942 ppm	Y 361.104	49.42494R
Si	251.611	0.23576	ppm	0.000009	0.0	472.48	0.23576 ppm	Y 361.104	117.88019
Sn	189.927	0.050819	ppm	0.001609	3.2	31.130	0.050819 ppm	Y 361.104	101.63755
Sr	216.596	0.010652	ppm	0.000366	3.4	45.863	0.010652 ppm	Y 361.104	106.51778
Ti	322.284	0.009922	ppm	0.000226	2.3	154.38	0.009922 ppm	Y 361.104	99.22365
Tl	190.794	0.011495	ppm	0.003540	30.8	3.2771	0.011495 ppm	Y 361.104	114.95286
V	289.164	0.010557	ppm	0.000895	8.5	65.240	0.010557 ppm	Y 361.104	105.57040
Zn	206.200	0.021616	ppm	0.001762	8.2	15.269	0.021616 ppm	Y 361.104	108.08145
Zr	257.147	0.008787	ppm	0.000418	4.8	93.105	0.008787 ppm	Y 361.104	87.87415

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El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0145	193509	158.402	0.1

CDL01 (CRI) 3/28/03, 11:05:56 PM Rack 1, Tube 13

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	607.42	611.16	619.83	
Al	237.312	20.715	21.809	22.168	
As	188.980	2.6414	4.0419	4.2756	

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El	Wavelen.	Replicates Intensity (c/s)		
B	249.772	18.264	20.936	21.909
Ba	233.527	81.180	84.290	80.895
Be	234.861	473.08	482.77	479.90
Ca	315.887	223.38	221.33	223.38
Cd	228.802	68.807	67.657	73.189
Co	231.160	481.83	484.30	488.68
Cr	267.716	546.33	551.73	545.79
Cu	324.754	1730.4	1741.2	1748.2
Fe	261.382	12.472	8.9902	9.4034
K	728.181	132.53	131.77	128.48
Li	610.365	778.79	778.25	750.84
Mg	279.078	6.7182	5.3243	9.6411
Mn	293.305	362.44	366.86	366.56
Mo	202.032	3.3563	3.6914	3.0675
Na	589.592	4530.3	4550.1	4525.4
Na	568.821	-448.03	-431.05	-491.46
Ni	221.648	96.625	98.829	100.85
Pb	220.353	132.69	139.27	139.09
Sb	217.582	55.784	54.638	56.076
Se	196.026	1.2182	2.5105	3.1300
Si	251.611	36.140	36.641	35.562
Sn	189.927	0.58511	0.041887	-1.1753
Sr	216.596	2.5447	-0.18795	0.81054
Ti	322.284	78.176	88.534	83.269
Tl	190.794	6.3153	7.0880	7.1010
V	289.164	631.49	644.78	637.75
Y	361.104	193616	194769	194392
Zn	206.200	31.063	29.644	29.384
Zr	257.147	12.095	6.3335	9.1598

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.019923	ppm	0.000202	1.0	612.80	0.019923 ppm	Y 361.104	99.61490
Al	237.312	0.044385	ppm	0.001561	3.5	21.564	0.044385 ppm	Y 361.104	-
As	188.980	0.016159	ppm	0.003294	20.4	3.6529	0.016159 ppm	Y 361.104	80.79579
B	249.772	0.001000	ppm	0.000177	17.7	20.370	0.001000 ppm	Y 361.104	-
Ba	233.527	0.000097	ppm	0.000060	62.1	82.122	0.000097 ppm	Y 361.104	-
Be	234.861	0.009969	ppm	0.000103	1.0	478.58	0.009969 ppm	Y 361.104	99.68813
Ca	315.887	0.014426	ppm	0.000232	1.6	222.70	0.014426 ppm	Y 361.104	-
Cd	228.802	0.010158	ppm	0.000426	4.2	69.884	0.010158 ppm	Y 361.104	101.57825

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Co	231.160	0.10241	ppm	0.000752	0.7	484.94	0.10241 ppm	Y 361.104	102.40829
Cr	267.716	0.020569	ppm	0.000124	0.6	547.95	0.020569 ppm	Y 361.104	102.84462
Cu	324.754	0.050727	ppm	0.000280	0.6	1739.9	0.050727 ppm	Y 361.104	101.45409
Fe	261.382	0.003859	ppm	0.001320	34.2	10.288	0.003859 ppm	Y 361.104	-
K	728.181	0.034954	ppm	0.001475	4.2	130.93	0.034954 ppm	Y 361.104	-
Li	610.365	-0.001097u	ppm	0.000391	35.7	769.29	-0.001097 ppm	Y 361.104	-
Mg	279.078	0.007774	ppm	0.002576	33.1	7.2279	0.007774 ppm	Y 361.104	-
Mn	293.305	0.030756	ppm	0.000212	0.7	365.29	0.030756 ppm	Y 361.104	102.52103
Mo	202.032	-0.001152u	ppm	0.000090	7.8	3.3717	-0.001152 ppm	Y 361.104	-
Na	589.592	0.024984	ppm	0.000098	0.4	4535.3	0.024984 ppm	Y 361.104	-
Ni	221.648	0.081696	ppm	0.001739	2.1	98.770	0.081696 ppm	Y 361.104	102.11977
Pb	220.353	0.10172	ppm	0.002726	2.7	137.02	0.10172 ppm	Y 361.104	101.71801
Sb	217.582	0.11381	ppm	0.001530	1.3	55.500	0.11381 ppm	Y 361.104	94.84570
Se	196.026	0.008324	ppm	0.004650	55.9	2.2862	0.008324 ppm	Y 361.104	83.24004
Si	251.611	0.003853	ppm	0.000287	7.4	36.114	0.003853 ppm	Y 361.104	-
Sn	189.927	-0.000471u	ppm	0.001477	313.3	-0.18276	-0.000471 ppm	Y 361.104	-
Sr	216.596	0.000378	ppm	0.000317	83.8	1.0558	0.000378 ppm	Y 361.104	-
Ti	322.284	0.000077u	ppm	0.000719	937.5	83.326	0.000077 ppm	Y 361.104	-
Tl	190.794	0.020867	ppm	0.001237	5.9	6.8348	0.020867 ppm	Y 361.104	104.33727
V	289.164	0.10312	ppm	0.001074	1.0	638.01	0.10312 ppm	Y 361.104	103.12298
Zn	206.200	0.044417	ppm	0.001398	3.1	30.030	0.044417 ppm	Y 361.104	111.04202
Zr	257.147	-0.000572u	ppm	0.000322	56.2	9.1960	-0.000572 ppm	Y 361.104	-

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0184	194259	587.835	0.3

HMCS (ICV) **3/28/03, 11:09:49 PM** **Rack 1, Tube 14**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	65268	65617	65662
Al	237.312	5049.0	5078.4	5107.3
As	188.980	2773.2	2792.8	2780.3
B	249.772	110057	111065	111315
Ba	233.527	323691	325437	326222
Be	234.861	502187	502363	502651
Ca	315.887	40.766	26.801	26.389
Cd	228.802	70847	71162	71475
Co	231.160	47939	48158	48327
Cr	267.716	274243	275764	276858
Cu	324.754	334572	333424	338398

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El	Wavelen.	Replicates Intensity (c/s)		
Fe	261.382	14973	15048	15103
K	728.181	164.95	149.26	159.34
Li	610.365	422264	424416	424895
Mg	279.078	7.8954	6.0076	6.1705
Mn	293.305	120792	121313	121787
Mo	202.032	3.9610	5.8074	4.2263
Na	589.592	15824	15878	16046
Na	568.821	-468.31	-480.89	-491.99
Ni	221.648	12602	12664	12702
Pb	220.353	14220	14306	14349
Sb	217.582	8.6211	8.5847	6.7770
Se	196.026	2173.6	2196.9	2193.5
Si	251.611	287.76	329.13	359.28
Sn	189.927	4.5573	3.9078	3.3752
Sr	216.596	45131	45201	45570
Ti	322.284	87.599	100.90	93.101
Tl	190.794	3775.6	3783.7	3788.2
V	289.164	64335	64692	64939
Y	361.104	189674	189867	189489
Zn	206.200	6705.8	6748.4	6789.8
Zr	257.147	92800	93558	94007

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	2.0530	ppm	0.006835	0.3	65515	2.0530 ppm	Y 361.104	102.65202
Al	237.312	10.402	ppm	0.060155	0.6	5078.2	10.402 ppm	Y 361.104	104.02154
As	188.980	10.368	ppm	0.036964	0.4	2782.1	10.368 ppm	Y 361.104	103.68450
B	249.772	10.422	ppm	0.062645	0.6	110812	10.422 ppm	Y 361.104	104.21758
Ba	233.527	10.420	ppm	0.041550	0.4	325117	10.420 ppm	Y 361.104	104.20242
Be	234.861	10.381	ppm	0.004836	0.0	502400	10.381 ppm	Y 361.104	103.81245
Ca	315.887	0.009676u	ppm	0.001598	16.5	31.319	0.009676 ppm	Y 361.104	-
Cd	228.802	10.386	ppm	0.045744	0.4	71161	10.386 ppm	Y 361.104	103.85700
Co	231.160	10.448	ppm	0.042129	0.4	48141	10.448 ppm	Y 361.104	104.47872
Cr	267.716	10.432	ppm	0.049715	0.5	275622	10.432 ppm	Y 361.104	104.31556
Cu	324.754	10.436	ppm	0.080991	0.8	335465	10.436 ppm	Y 361.104	104.36439
Fe	261.382	10.480	ppm	0.045295	0.4	15041	10.480 ppm	Y 361.104	104.80449
K	728.181	0.049495	ppm	0.005450	11.0	157.85	0.049495 ppm	Y 361.104	-
Li	610.365	10.349	ppm	0.034290	0.3	423858	10.349 ppm	Y 361.104	103.48893
Mg	279.078	0.010512	ppm	0.001223	11.6	6.6912	0.010512 ppm	Y 361.104	-
Mn	293.305	10.411	ppm	0.042691	0.4	121297	10.411 ppm	Y 361.104	104.11483

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Mo	202.032	-0.000780u	ppm	0.000287	36.8	4.6649	-0.000780 ppm	Y 361.104	-
Na	589.592	0.060554	ppm	0.000874	1.4	15916	0.060554 ppm	Y 361.104	-
Ni	221.648	10.412	ppm	0.041698	0.4	12656	10.412 ppm	Y 361.104	104.12034
Pb	220.353	10.398	ppm	0.047685	0.5	14292	10.398 ppm	Y 361.104	103.98055
Sb	217.582	0.032173	ppm	0.002122	6.6	7.9942	0.032173 ppm	Y 361.104	-
Se	196.026	10.429	ppm	0.060171	0.6	2188.0	10.429 ppm	Y 361.104	104.28848
Si	251.611	0.15825	ppm	0.019084	12.1	325.39	0.15825 ppm	Y 361.104	-
Sn	189.927	0.005098	ppm	0.000970	19.0	3.9468	0.005098 ppm	Y 361.104	-
Sr	216.596	10.379	ppm	0.054094	0.5	45300	10.379 ppm	Y 361.104	103.79092
Ti	322.284	0.000661	ppm	0.000928	140.3	93.867	0.000661 ppm	Y 361.104	-
Tl	190.794	10.353	ppm	0.017541	0.2	3782.5	10.353 ppm	Y 361.104	103.52749
V	289.164	10.471	ppm	0.049018	0.5	64655	10.471 ppm	Y 361.104	104.71027
Zn	206.200	10.411	ppm	0.064899	0.6	6748.0	10.411 ppm	Y 361.104	104.10865
Zr	257.147	10.432	ppm	0.068103	0.7	93455	10.432 ppm	Y 361.104	104.32267

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.99442	189677	189.207	0.1

ICS-A (ICSA) 3/28/03, 11:13:43 PM Rack 1, Tube 15

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-28.763	-19.342	-28.023
Al	237.312	261773	261051	260104
As	188.980	1.9012	2.2734	5.7977
B	249.772	-922.37	-963.73	-1005.6
Ba	233.527	226.71	230.37	228.03
Be	234.861	-1753.5	-1846.7	-1832.0
Ca	315.887	2522159	2521095	2518182
Cd	228.802	11.873	9.1010	13.845
Co	231.160	94.118	89.626	90.175
Cr	267.716	80.831	99.099	88.415
Cu	324.754	-554.42	-583.89	-563.13
Fe	261.382	279226	279241	279027
K	728.181	247.39	259.87	267.25
Li	610.365	-9696.4	-9634.6	-9660.6
Mg	279.078	444072	444120	443540
Mn	293.305	103.92	102.55	109.03
Mo	202.032	-5.1137	-0.98247	-0.005941
Na	589.592	19380	19332	19259
Na	568.821	815.88	750.25	776.70

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El	Wavelen.	Replicates Intensity (c/s)		
Ni	221.648	4.2020	7.4256	3.4821
Pb	220.353	147.71	149.66	158.40
Sb	217.582	-26.311	-22.623	-18.220
Se	196.026	5.2526	1.9432	4.3725
Si	251.611	139.86	142.04	140.94
Sn	189.927	1.5232	2.1727	1.7726
Sr	216.596	149.71	154.62	157.89
Ti	322.284	91.810	82.687	90.233
Tl	190.794	-15.377	-16.413	-15.434
V	289.164	62.482	66.357	60.142
Y	361.104	171028	171066	171129
Zn	206.200	11.496	10.502	10.647
Zr	257.147	89.660	92.760	97.582

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000378u	ppm	0.000166	44.0	-25.376	-0.000378 ppm	Y 361.104	-0.00038
Al	237.312	538.38	ppm	1.7262	0.3	260976	538.38 ppm	Y 361.104	-
As	188.980	0.014938	ppm	0.008014	53.6	3.3241	0.014938 ppm	Y 361.104	0.01494
B	249.772	-0.028738u	ppm	0.003911	13.6	-963.89	-0.028738 ppm	Y 361.104	-0.02874
Ba	233.527	0.004798	ppm	0.000060	1.2	228.37	0.004798 ppm	Y 361.104	0.00480
Be	234.861	-0.009516u	ppm	0.001035	10.9	-1810.7	-0.009516 ppm	Y 361.104	-0.00952K
Ca	315.887	492.03	ppm	0.40207	0.1	2520479	492.03 ppm	Y 361.104	-
Cd	228.802	0.001670	ppm	0.000348	20.8	11.606	0.001670 ppm	Y 361.104	0.00167
Co	231.160	0.004138	ppm	0.000531	12.8	91.306	0.004138 ppm	Y 361.104	0.00414
Cr	267.716	0.003216	ppm	0.000347	10.8	89.448	0.003216 ppm	Y 361.104	0.00322
Cu	324.754	-0.001344u	ppm	0.000471	35.0	-567.15	-0.001344 ppm	Y 361.104	-0.00134
Fe	261.382	193.76	ppm	0.082719	0.0	279165	193.76 ppm	Y 361.104	-
K	728.181	0.12216	ppm	0.006879	5.6	258.17	0.12216 ppm	Y 361.104	0.12216
Li	610.365	-0.11723u	ppm	0.000758	0.6	-9663.9	-0.11723 ppm	Y 361.104	-0.11723K
Mg	279.078	519.09	ppm	0.37613	0.1	443911	519.09 ppm	Y 361.104	-
Mn	293.305	0.008428	ppm	0.000293	3.5	105.17	0.008428 ppm	Y 361.104	0.00843
Mo	202.032	-0.002707u	ppm	0.000780	28.8	-2.0340	-0.002707 ppm	Y 361.104	-0.00271
Na	589.592	0.13653	ppm	0.000456	0.3	19324	0.13653 ppm	Y 361.104	0.13653
Ni	221.648	0.004516	ppm	0.001727	38.2	5.0366	0.004516 ppm	Y 361.104	0.00452
Pb	220.353	0.015182	ppm	0.004141	27.3	151.92	0.015182 ppm	Y 361.104	0.01518
Sb	217.582	-0.027698u	ppm	0.008152	29.4	-22.385	-0.027698 ppm	Y 361.104	-0.02770K
Se	196.026	0.007606	ppm	0.008172	107.4	3.8561	0.007606 ppm	Y 361.104	0.00761
Si	251.611	0.062701	ppm	0.000579	0.9	140.95	0.062701 ppm	Y 361.104	0.06270
Sn	189.927	0.002803	ppm	0.000537	19.2	1.8229	0.002803 ppm	Y 361.104	0.00280

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Sr	216.596	0.010191	ppm	0.000944	9.3	154.07	0.010191 ppm	Y 361.104	0.01019
Ti	322.284	0.000753u	ppm	0.000677	89.9	88.243	0.000753 ppm	Y 361.104	0.00075
Tl	190.794	-0.002453u	ppm	0.001601	65.3	-15.741	-0.002453 ppm	Y 361.104	-0.00245
V	289.164	0.003812	ppm	0.000507	13.3	62.993	0.003812 ppm	Y 361.104	0.00381
Zn	206.200	0.024149	ppm	0.000830	3.4	10.882	0.024149 ppm	Y 361.104	0.02415
Zr	257.147	-0.009165	ppm	0.000446	4.9	93.334	-0.009165 ppm	Y 361.104	-0.00916

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	251.104	0.89689	171074	50.786	0.0

ICS-AB (ICSAB) 3/28/03, 11:17:37 PM Rack 1, Tube 16

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	6893.1	6927.7	6945.7
Al	237.312	262966	266244	266140
As	188.980	24.647	27.391	26.483
B	249.772	-1052.2	-1088.6	-1038.3
Ba	233.527	16400	16520	16554
Be	234.861	23922	24315	24224
Ca	315.887	2538880	2565898	2571850
Cd	228.802	7420.1	7473.7	7493.0
Co	231.160	2372.6	2398.5	2397.5
Cr	267.716	13407	13545	13533
Cu	324.754	17214	17340	17342
Fe	261.382	281953	284538	284506
K	728.181	162.88	156.21	155.67
Li	610.365	-9785.4	-9782.0	-9847.2
Mg	279.078	449021	454104	452914
Mn	293.305	5907.9	5966.6	5978.5
Mo	202.032	-2.2378	-4.2080	-5.3390
Na	589.592	10791	10902	10915
Na	568.821	808.81	787.17	789.28
Ni	221.648	1170.4	1181.1	1182.7
Pb	220.353	1493.2	1500.3	1496.6
Sb	217.582	292.39	298.97	297.57
Se	196.026	9.3073	15.164	14.291
Si	251.611	221.93	228.05	228.75
Sn	189.927	3.0909	1.3764	0.60771
Sr	216.596	159.85	152.28	161.77
Ti	322.284	79.998	75.756	80.866

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El	Wavelen.	Replicates Intensity (c/s)		
Ti	190.794	20.699	20.439	20.034
V	289.164	3240.9	3286.4	3271.0
Y	361.104	169046	168069	168565
Zn	206.200	625.52	633.83	629.62
Zr	257.147	106.22	117.05	110.89

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.21999	ppm	0.000847	0.4	6922.2	0.21999 ppm	Y 361.104	109.99480
Al	237.312	546.92	ppm	3.8439	0.7	265116	546.92 ppm	Y 361.104	109.38395
As	188.980	0.099966	ppm	0.005209	5.2	26.174	0.099966 ppm	Y 361.104	99.96555
B	249.772	-0.036656u	ppm	0.002443	6.7	-1059.7	-0.036656 ppm	Y 361.104	
Ba	233.527	0.52616	ppm	0.002585	0.5	16491	0.52616 ppm	Y 361.104	105.23250
Be	234.861	0.52736	ppm	0.004252	0.8	24154	0.52736 ppm	Y 361.104	105.47258
Ca	315.887	499.53	ppm	3.4313	0.7	2558876	499.53 ppm	Y 361.104	99.90580
Cd	228.802	1.0882	ppm	0.005506	0.5	7462.3	1.0882 ppm	Y 361.104	108.81509
Co	231.160	0.49942	ppm	0.003188	0.6	2389.5	0.49942 ppm	Y 361.104	99.88342
Cr	267.716	0.51059	ppm	0.002908	0.6	13495	0.51059 ppm	Y 361.104	102.11821
Cu	324.754	0.55489	ppm	0.002290	0.4	17299	0.55489 ppm	Y 361.104	110.97742
Fe	261.382	196.88	ppm	1.0296	0.5	283666	196.88 ppm	Y 361.104	98.44234
K	728.181	0.053493	ppm	0.002751	5.1	158.26	0.053493 ppm	Y 361.104	
Li	610.365	-0.11856u	ppm	0.000898	0.8	-9804.9	-0.11856 ppm	Y 361.104	
Mg	279.078	528.57	ppm	3.1092	0.6	452013	528.57 ppm	Y 361.104	105.71346
Mn	293.305	0.51023	ppm	0.003245	0.6	5951.0	0.51023 ppm	Y 361.104	102.04618
Mo	202.032	-0.003251u	ppm	0.000451	13.9	-3.9283	-0.003251 ppm	Y 361.104	
Na	589.592	0.070233	ppm	0.000512	0.7	10869	0.070233 ppm	Y 361.104	
Ni	221.648	0.96919	ppm	0.005488	0.6	1178.1	0.96919 ppm	Y 361.104	96.91922
Pb	220.353	0.99192	ppm	0.002610	0.3	1496.7	0.99192 ppm	Y 361.104	99.19160
Sb	217.582	0.61516	ppm	0.006983	1.1	296.31	0.61516 ppm	Y 361.104	102.52718
Se	196.026	0.050693	ppm	0.015065	29.7	12.921	0.050693 ppm	Y 361.104	101.38672
Si	251.611	0.10813	ppm	0.001993	1.8	226.24	0.10813 ppm	Y 361.104	
Sn	189.927	0.002701	ppm	0.002083	77.1	1.6917	0.002701 ppm	Y 361.104	
Sr	216.596	0.010554	ppm	0.001150	10.9	157.97	0.010554 ppm	Y 361.104	-
Ti	322.284	-0.000483u	ppm	0.000379	78.6	78.873	-0.000483 ppm	Y 361.104	
Tl	190.794	0.095071	ppm	0.000921	1.0	20.391	0.095071 ppm	Y 361.104	95.07081
V	289.164	0.52302	ppm	0.003738	0.7	3266.1	0.52302 ppm	Y 361.104	104.60355
Zn	206.200	0.97992	ppm	0.006423	0.7	629.66	0.97992 ppm	Y 361.104	97.99226
Zr	257.147	-0.007461	ppm	0.000607	8.1	111.39	-0.007461 ppm	Y 361.104	

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.88371	168560	488.310	0.3

CCV (CCV) 3/28/03, 11:21:30 PM Rack 1, Tube 17

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	31565	31502	31561
Al	237.312	2452.2	2467.5	2483.6
As	188.980	1332.5	1349.2	1355.9
B	249.772	20783	20967	21069
Ba	233.527	155123	156054	156335
Be	234.861	242031	243818	244146
Ca	315.887	255820	257571	258137
Cd	228.802	34040	34280	34269
Co	231.160	22759	22919	22984
Cr	267.716	130538	131599	131820
Cu	324.754	159204	160788	161307
Fe	261.382	7128.6	7186.4	7190.8
K	728.181	75990	76119	76364
Li	610.365	201001	202040	202398
Mg	279.078	41654	41987	42016
Mn	293.305	57994	58422	58546
Mo	202.032	3432.0	3503.0	3541.5
Na	589.592	7159929	7203261	7189994
Na	568.821	12440	12428	12533
Ni	221.648	6055.1	6103.5	6105.2
Pb	220.353	6775.5	6819.3	6831.1
Sb	217.582	501.11	502.79	508.07
Se	196.026	1037.9	1048.6	1062.5
Si	251.611	9370.8	9425.8	9478.1
Sn	189.927	3013.8	3030.7	3032.5
Sr	216.596	21732	21899	21800
Ti	322.284	35728	35753	36117
Tl	190.794	1735.5	1769.0	1764.7
V	289.164	31120	31321	31398
Y	361.104	186426	185822	186670
Zn	206.200	3246.5	3264.8	3265.4
Zr	257.147	45380	45483	45524

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.98858	ppm	0.001120	0.1	31543	0.98858 ppm	Y 361.104	98.85850
Al	237.312	5.0551	ppm	0.032324	0.6	2467.8	5.0551 ppm	Y 361.104	101.10259
As	188.980	5.0171	ppm	0.044921	0.9	1345.9	5.0171 ppm	Y 361.104	100.34126
B	249.772	1.9700	ppm	0.013642	0.7	20940	1.9700 ppm	Y 361.104	98.50228
Ba	233.527	4.9934	ppm	0.020338	0.4	155837	4.9934 ppm	Y 361.104	99.86751
Be	234.861	5.0281	ppm	0.023517	0.5	243331	5.0281 ppm	Y 361.104	100.56111
Ca	315.887	50.209	ppm	0.23585	0.5	257176	50.209 ppm	Y 361.104	100.41731
Cd	228.802	4.9908	ppm	0.019723	0.4	34196	4.9908 ppm	Y 361.104	99.81673
Co	231.160	4.9608	ppm	0.025080	0.5	22887	4.9608 ppm	Y 361.104	99.21504
Cr	267.716	4.9700	ppm	0.025936	0.5	131319	4.9700 ppm	Y 361.104	99.39969
Cu	324.754	4.9891	ppm	0.034076	0.7	160433	4.9891 ppm	Y 361.104	99.78223
Fe	261.382	5.0000	ppm	0.024093	0.5	7168.6	5.0000 ppm	Y 361.104	100.00014
K	728.181	50.917	ppm	0.12438	0.2	76157	50.917 ppm	Y 361.104	101.83305
Li	610.365	4.9312	ppm	0.017750	0.4	201813	4.9312 ppm	Y 361.104	98.62386
Mg	279.078	48.979	ppm	0.23468	0.5	41886	48.979 ppm	Y 361.104	97.95747
Mn	293.305	5.0056	ppm	0.024846	0.5	58321	5.0056 ppm	Y 361.104	100.11237
Mo	202.032	1.0022	ppm	0.015989	1.6	3492.2	1.0022 ppm	Y 361.104	100.22219
Na	589.592	52.056	ppm	0.15492	0.3	7184395	52.056 ppm	Y 361.104	104.11217
Ni	221.648	5.0009	ppm	0.023387	0.5	6087.9	5.0009 ppm	Y 361.104	100.01825
Pb	220.353	4.9565	ppm	0.021291	0.4	6808.6	4.9565 ppm	Y 361.104	99.13005
Sb	217.582	1.0230	ppm	0.007307	0.7	503.99	1.0230 ppm	Y 361.104	102.30470
Se	196.026	5.0016	ppm	0.058838	1.2	1049.6	5.0016 ppm	Y 361.104	100.03188
Si	251.611	4.9935	ppm	0.028495	0.6	9424.9	4.9935 ppm	Y 361.104	99.87018
Sn	189.927	4.9547	ppm	0.016857	0.3	3025.7	4.9547 ppm	Y 361.104	99.09408
Sr	216.596	4.9973	ppm	0.019235	0.4	21811	4.9973 ppm	Y 361.104	99.94556
Ti	322.284	4.9643	ppm	0.030244	0.6	35866	4.9643 ppm	Y 361.104	99.28672
Tl	190.794	4.8019	ppm	0.050107	1.0	1756.4	4.8019 ppm	Y 361.104	96.03794
V	289.164	5.0673	ppm	0.023208	0.5	31279	5.0673 ppm	Y 361.104	101.34521
Zn	206.200	5.0267	ppm	0.016593	0.3	3258.9	5.0267 ppm	Y 361.104	100.53339
Zr	257.147	5.0765	ppm	0.008264	0.2	45462	5.0765 ppm	Y 361.104	101.53093

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.97675	186306	436.784	0.2

BLA01 (CCB) 3/28/03, 11:25:24 PM Rack 1, Tube 18

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-7.3108	-19.678	-7.0561	
Al	237.312	-0.23371	1.4648	-0.59958	
As	188.980	2.1867	2.8501	0.72795	

El	Wavelen.	Replicates Intensity (c/s)			
B	249.772	58.022	46.487	41.901	
Ba	233.527	80.839	82.361	87.458	
Be	234.861	-2.3384	-0.25390	-1.7889	
Ca	315.887	208.36	212.59	211.44	
Cd	228.802	-1.3275	-1.6234	-3.4632	
Co	231.160	15.360	7.5758	9.7667	
Cr	267.716	8.3681	9.0375	6.3304	
Cu	324.754	104.96	105.61	103.35	
Fe	261.382	12.802	12.321	12.780	
K	728.181	135.22	144.60	135.16	
Li	610.365	773.69	766.23	810.28	
Mg	279.078	7.9521	11.038	7.9400	
Mn	293.305	1.2301	8.4241	0.64873	
Mo	202.032	25.571	23.873	20.532	
Na	589.592	4603.0	4581.6	4571.0	
Na	568.821	-466.66	-462.74	-449.64	
Ni	221.648	-1.1092	0.010281	-1.9754	
Pb	220.353	-0.63884	-0.19880	-1.1097	
Sb	217.582	-2.9061	-3.1839	-1.1453	
Se	196.026	1.6624	1.9079	1.9587	
Si	251.611	30.293	31.899	28.650	
Sn	189.927	2.3410	1.5700	-0.40441	
Sr	216.596	0.72712	0.24186	0.85215	
Ti	322.284	89.785	83.779	87.811	
Tl	190.794	4.4364	6.0195	3.6520	
V	289.164	4.7605	4.2135	-3.6894	
Y	361.104	193259	194764	193515	
Zn	206.200	2.8907	0.43340	0.62239	
Zr	257.147	12.497	10.309	16.183	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.000125u	ppm	0.000229	182.9	-11.348	0.000125 ppm	Y 361.104	0.00013
Al	237.312	0.000399u	ppm	0.002272	568.9	0.21052	0.000399 ppm	Y 361.104	0.00040
As	188.980	0.009709	ppm	0.004046	41.7	1.9216	0.009709 ppm	Y 361.104	0.00971
B	249.772	0.003671	ppm	0.000781	21.3	48.803	0.003671 ppm	Y 361.104	0.00367
Ba	233.527	0.000156	ppm	0.000111	71.4	83.553	0.000156 ppm	Y 361.104	0.00016
Be	234.861	0.000051	ppm	0.000022	44.1	-1.4604	0.000051 ppm	Y 361.104	0.00005
Ca	315.887	0.012506	ppm	0.000427	3.4	210.79	0.012506 ppm	Y 361.104	0.01251
Cd	228.802	-0.000338u	ppm	0.000169	49.9	-2.1380	-0.000338 ppm	Y 361.104	-0.00034

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Co	231.160	0.000322u	ppm	0.000870	270.1	10.901	0.000322 ppm	Y 361.104	0.00032
Cr	267.716	0.000130	ppm	0.000053	41.2	7.9120	0.000130 ppm	Y 361.104	0.00013
Cu	324.754	-0.000178u	ppm	0.000036	20.3	104.64	-0.000178 ppm	Y 361.104	-0.00018
Fe	261.382	0.005044	ppm	0.000188	3.7	12.634	0.005044 ppm	Y 361.104	0.00504
K	728.181	0.040021	ppm	0.003723	9.3	138.33	0.040021 ppm	Y 361.104	0.04002
Li	610.365	-0.000752u	ppm	0.000577	76.7	783.40	-0.000752 ppm	Y 361.104	-0.00075
Mg	279.078	0.009804	ppm	0.002087	21.3	8.9766	0.009804 ppm	Y 361.104	0.00980
Mn	293.305	-0.000305u	ppm	0.000372	121.9	3.4343	-0.000305 ppm	Y 361.104	-0.00030
Mo	202.032	0.004587	ppm	0.000737	16.1	23.325	0.004587 ppm	Y 361.104	0.00459
Na	589.592	0.025360	ppm	0.000123	0.5	4585.2	0.025360 ppm	Y 361.104	0.02536
Ni	221.648	-0.000374u	ppm	0.000818	218.7	-1.0248	-0.000374 ppm	Y 361.104	-0.00037
Pb	220.353	0.001590	ppm	0.000331	20.8	-0.64911	0.001590 ppm	Y 361.104	0.00159
Sb	217.582	-0.002844u	ppm	0.002225	78.2	-2.4118	-0.002844 ppm	Y 361.104	-0.00284
Se	196.026	0.006211	ppm	0.000756	12.2	1.8430	0.006211 ppm	Y 361.104	0.00621
Si	251.611	0.000753u	ppm	0.000863	114.6	30.280	0.000753 ppm	Y 361.104	0.00075
Sn	189.927	0.001735u	ppm	0.002320	133.7	1.1688	0.001735 ppm	Y 361.104	0.00173
Sr	216.596	0.000286	ppm	0.000074	25.9	0.60704	0.000286 ppm	Y 361.104	0.00029
Ti	322.284	0.000593	ppm	0.000425	71.6	87.125	0.000593 ppm	Y 361.104	0.00059
Tl	190.794	0.015468	ppm	0.003316	21.4	4.7026	0.015468 ppm	Y 361.104	0.01547Z
V	289.164	0.000270u	ppm	0.000764	283.0	1.7615	0.000270 ppm	Y 361.104	0.00027
Zn	206.200	0.000064u	ppm	0.002114	3297.1	1.3155	0.000064 ppm	Y 361.104	0.00006
Zr	257.147	-0.000147u	ppm	0.000331	225.2	12.996	-0.000147 ppm	Y 361.104	-0.00015

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0163	193846	805.666	0.4

Na 500ppm LRV (Samp) **3/28/03, 11:49:20 PM** **Rack 1, Tube 19**
Weight: 1 Volume: 1 Dilution: 1

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	14.341	1.9887	2.5791	
Al	237.312	-1.6912	0.93686	2.4169	
As	188.980	-0.49955	-0.16159	1.0045	
B	249.772	97.376	87.931	79.329	
Ba	233.527	89.210	85.670	87.571	
Be	234.861	1.1782	8.6592	8.9538	
Ca	315.887	146.31	149.30	140.55	
Cd	228.802	-6.0776	-1.2285	-2.6419	
Co	231.160	10.127	8.2740	11.316	
Cr	267.716	1.4101	3.5273	7.8893	

El	Wavelen.	Replicates Intensity (c/s)			
Cu	324.754	130.80	141.71	138.42	
Fe	261.382	10.040	6.6896	7.5615	
K	728.181	165.73	165.84	177.30	
Li	610.365	829.20	856.29	829.58	
Mg	279.078	-0.56306	0.22200	3.4997	
Mn	293.305	6.2701	10.104	14.242	
Mo	202.032	4.6219	4.7602	1.8404	
Na	589.592	27037074	27554276	28135898	
Na	568.821	114442	133783	151571	
Ni	221.648	-2.4925	0.10833	0.038065	
Pb	220.353	-2.0170	-5.2161	-4.9234	
Sb	217.582	-2.3602	-1.5639	-3.2392	
Se	196.026	1.5508	1.2154	2.3154	
Si	251.611	33.131	32.013	27.248	
Sn	189.927	0.038241	-0.052116	-0.42952	
Sr	216.596	0.43010	-0.070717	2.4445	
Ti	322.284	90.605	91.922	89.926	
Tl	190.794	0.098181	0.59240	-0.95746	
V	289.164	12.926	-0.46029	4.9633	
Y	361.104	182721	182053	181547	
Zn	206.200	2.6254	2.9584	0.029410	
Zr	257.147	14.016	17.586	13.115	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.000685	ppm	0.000221	32.2	6.3029	0.000685 ppm	Y 361.104	1.0000
Al	237.312	0.001110u	ppm	0.004292	386.7	0.55420	0.001110 ppm	Y 361.104	1.0000
As	188.980	0.002976	ppm	0.002941	98.8	0.11445	0.002976 ppm	Y 361.104	1.0000
B	249.772	0.007375	ppm	0.000849	11.5	88.212	0.007375 ppm	Y 361.104	1.0000
Ba	233.527	0.000282	ppm	0.000057	20.2	87.484	0.000282 ppm	Y 361.104	1.0000
Be	234.861	0.000210	ppm	0.000091	43.4	6.2637	0.000210 ppm	Y 361.104	1.0000
Ca	315.887	-0.000268u	ppm	0.000868	323.5	145.38	-0.000268 ppm	Y 361.104	1.0000
Cd	228.802	-0.000516u	ppm	0.000364	70.4	-3.3160	-0.000516 ppm	Y 361.104	1.0000
Co	231.160	0.000107u	ppm	0.000332	311.4	9.9056	0.000107 ppm	Y 361.104	1.0000
Cr	267.716	-0.000008u	ppm	0.000125	1549.7	4.2756	-0.000008 ppm	Y 361.104	1.0000
Cu	324.754	0.000828	ppm	0.000174	21.0	136.98	0.000828 ppm	Y 361.104	1.0000
Fe	261.382	0.001884	ppm	0.001206	64.0	8.0970	0.001884 ppm	Y 361.104	1.0000
K	728.181	0.061470	ppm	0.004557	7.4	169.62	0.061470 ppm	Y 361.104	1.0000
Li	610.365	0.000589	ppm	0.000380	64.5	838.36	0.000589 ppm	Y 361.104	1.0000
Mg	279.078	0.000539u	ppm	0.002520	467.5	1.0529	0.000539 ppm	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000135u	ppm	0.000024	18.1	-19.537	-0.000135 ppm	Y 361.104	1.0000
Al	237.312	0.043801	ppm	0.004242	9.7	21.246	0.043801 ppm	Y 361.104	1.0000
As	188.980	0.001537u	ppm	0.003215	209.2	-0.26680	0.001537 ppm	Y 361.104	1.0000
B	249.772	0.14179	ppm	0.000573	0.4	1517.7	0.14179 ppm	Y 361.104	1.0000
Ba	233.527	0.009368	ppm	0.000101	1.1	370.89	0.009368 ppm	Y 361.104	1.0000
Be	234.861	0.000017u	ppm	0.000046	266.0	-3.4911	0.000017 ppm	Y 361.104	1.0000
Ca	315.887	30.847	ppm	0.053993	0.2	158108	30.847 ppm	Y 361.104	1.0000
Cd	228.802	-0.000105u	ppm	0.000275	260.7	-0.39020	-0.000105 ppm	Y 361.104	1.0000
Co	231.160	0.000808	ppm	0.000447	55.4	14.190	0.000808 ppm	Y 361.104	1.0000
Cr	267.716	0.011414	ppm	0.000052	0.5	306.07	0.011414 ppm	Y 361.104	1.0000
Cu	324.754	0.002110	ppm	0.000049	2.3	178.27	0.002110 ppm	Y 361.104	1.0000
Fe	261.382	0.065054	ppm	0.001965	3.0	99.085	0.065054 ppm	Y 361.104	1.0000
K	728.181	27.741	ppm	0.001796	0.2	41079	27.741 ppm	Y 361.104	1.0000
Li	610.365	0.013613	ppm	0.000598	4.4	1014.4	0.013613 ppm	Y 361.104	1.0000
Mg	279.078	19.650	ppm	0.049492	0.3	16804	19.650 ppm	Y 361.104	1.0000
Mn	293.305	0.020343	ppm	0.000252	1.2	243.97	0.020343 ppm	Y 361.104	1.0000
Mo	202.032	0.046454	ppm	0.003844	8.3	168.90	0.046454 ppm	Y 361.104	1.0000
Na	589.592	186.50o	ppm	0.21415	0.1	27544410	186.50 ppm	Y 361.104	1.0000
Na	568.821	363.76	ppm	0.66229	0.2	100202	363.76 ppm	Y 361.104	1.0000
Ni	221.648	0.31728	ppm	0.000589	0.2	399.46	0.31728 ppm	Y 361.104	1.0000
Pb	220.353	0.000717u	ppm	0.002361	329.3	-1.9683	0.000717 ppm	Y 361.104	1.0000
Sb	217.582	0.015509	ppm	0.001935	12.5	6.5587	0.015509 ppm	Y 361.104	1.0000
Se	196.026	-0.000995u	ppm	0.006320	635.4	0.33183	-0.000995 ppm	Y 361.104	1.0000
Si	251.611	7.3161	ppm	0.028786	0.4	13795	7.3161 ppm	Y 361.104	1.0000
Sn	189.927	0.011411	ppm	0.002870	25.1	7.0655	0.011411 ppm	Y 361.104	1.0000
Sr	216.596	0.15534	ppm	0.001141	0.7	677.37	0.15534 ppm	Y 361.104	1.0000
Ti	322.284	0.002769	ppm	0.000836	30.2	103.11	0.002769 ppm	Y 361.104	1.0000
Tl	190.794	0.007567	ppm	0.002219	29.3	1.8080	0.007567 ppm	Y 361.104	1.0000
V	289.164	0.001842	ppm	0.000927	50.3	10.942	0.001842 ppm	Y 361.104	1.0000
Zn	206.200	0.19801	ppm	0.003739	1.9	129.38	0.19801 ppm	Y 361.104	1.0000
Zr	257.147	-0.000042u	ppm	0.000214	508.7	14.008	-0.000042 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.95442	182048	504.593	0.3

CCV (CCV) 3/29/03, 10:22:06 AM Rack 2, Tube 79

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	31971	32128	32187
Al	237.312	2438.6	2456.1	2467.4
As	188.980	1356.8	1367.5	1366.8
B	249.772	20520	20685	20777
Ba	233.527	154192	155070	155160
Be	234.861	242567	243969	243690
Ca	315.887	257810	258871	259383
Cd	228.802	34631	34722	34913
Co	231.160	22907	22979	23024
Cr	267.716	132566	133362	133772
Cu	324.754	162186	161879	163289
Fe	261.382	7157.8	7192.7	7208.1
K	728.181	69271	69557	69398
Li	610.365	202402	202962	203254
Mg	279.078	42104	42373	42416
Mn	293.305	58235	58577	58656
Mo	202.032	3453.4	3527.2	3557.9
Na	589.592	7314181	7328422	7352405
Na	568.821	12564	12621	12677
Ni	221.648	6056.6	6094.7	6099.5
Pb	220.353	6814.3	6840.7	6858.7
Sb	217.582	502.46	506.95	502.78
Se	196.026	1044.4	1056.7	1058.7
Si	251.611	9447.8	9513.1	9535.0
Sn	189.927	3034.1	3049.9	3055.4
Sr	216.596	21671	21946	22036
Ti	322.284	35866	36090	36118
Tl	190.794	1711.8	1759.7	1777.7
V	289.164	31249	31469	31513
Y	361.104	183960	185119	185103
Zn	206.200	3204.5	3233.5	3270.6
Zr	257.147	44559	45263	45535

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	1.0064	ppm	0.003538	0.4	32095	1.0064 ppm	Y 361.104	100.63572
Al	237.312	5.0275	ppm	0.029951	0.6	2454.1	5.0275 ppm	Y 361.104	100.54910
As	188.980	5.0834	ppm	0.022230	0.4	1363.7	5.0834 ppm	Y 361.104	101.66810
B	249.772	1.9438	ppm	0.012208	0.6	20661	1.9438 ppm	Y 361.104	97.19114

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ba	233.527	4.9604	ppm	0.017149	0.3	154807	4.9604 ppm	Y 361.104	99.20715
Be	234.861	5.0297	ppm	0.015331	0.3	243409	5.0297 ppm	Y 361.104	100.59304
Ca	315.887	50.503	ppm	0.15675	0.3	258688	50.503 ppm	Y 361.104	101.00660
Cd	228.802	5.0724	ppm	0.021025	0.4	34755	5.0724 ppm	Y 361.104	101.44814
Co	231.160	4.9787	ppm	0.012759	0.3	22970	4.9787 ppm	Y 361.104	99.57391
Cr	267.716	5.0424	ppm	0.023197	0.5	133233	5.0424 ppm	Y 361.104	100.84884
Cu	324.754	5.0519	ppm	0.023071	0.5	162451	5.0519 ppm	Y 361.104	101.03809
Fe	261.382	5.0123	ppm	0.017873	0.4	7186.2	5.0123 ppm	Y 361.104	100.24686
K	728.181	46.493	ppm	0.094056	0.2	69409	46.493 ppm	Y 361.104	92.98533
Li	610.365	4.9572	ppm	0.010594	0.2	202873	4.9572 ppm	Y 361.104	99.14391
Mg	279.078	49.460	ppm	0.19784	0.4	42297	49.460 ppm	Y 361.104	98.92096
Mn	293.305	5.0201	ppm	0.019176	0.4	58489	5.0201 ppm	Y 361.104	100.40131
Mo	202.032	1.0082	ppm	0.015436	1.5	3512.8	1.0082 ppm	Y 361.104	100.81590
Na	589.592	53.083	ppm	0.13459	0.3	7331670	53.083 ppm	Y 361.104	106.16621
Ni	221.648	4.9973	ppm	0.019309	0.4	6083.6	4.9973 ppm	Y 361.104	99.94679
Pb	220.353	4.9778	ppm	0.016271	0.3	6837.9	4.9778 ppm	Y 361.104	99.55579
Sb	217.582	1.0232	ppm	0.005049	0.5	504.06	1.0232 ppm	Y 361.104	102.32053
Se	196.026	5.0189	ppm	0.036769	0.7	1053.3	5.0189 ppm	Y 361.104	100.37837
Si	251.611	5.0327	ppm	0.024132	0.5	9498.6	5.0327 ppm	Y 361.104	100.65395
Sn	189.927	4.9887	ppm	0.018141	0.4	3046.4	4.9887 ppm	Y 361.104	99.77498
Sr	216.596	5.0141	ppm	0.043536	0.9	21884	5.0141 ppm	Y 361.104	100.28252
Ti	322.284	4.9864	ppm	0.019175	0.4	36025	4.9864 ppm	Y 361.104	99.72820
Tl	190.794	4.7834	ppm	0.093682	2.0	1749.7	4.7834 ppm	Y 361.104	95.66830
V	289.164	5.0887	ppm	0.022895	0.4	31410	5.0887 ppm	Y 361.104	101.77370
Zn	206.200	4.9914	ppm	0.051217	1.0	3236.2	4.9914 ppm	Y 361.104	99.82873
Zr	257.147	5.0382	ppm	0.056240	1.1	45119	5.0382 ppm	Y 361.104	100.76442

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.96847	184727	664.769	0.4

BLA01 (CCB) **3/29/03, 10:26:02 AM** **Rack 2, Tube 80**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-17.780	-21.290	-20.434
Al	237.312	-1.3007	-4.4346	-0.60343
As	188.980	-0.088297	1.6000	2.6793
B	249.772	241.00	225.14	205.68
Ba	233.527	80.557	82.696	75.704
Be	234.861	0.91129	-4.6661	-1.0887
Ca	315.887	145.19	143.68	144.53

El	Wavelen.	Replicates Intensity (c/s)		
Cd	228.802	-0.035701	0.26916	2.4532
Co	231.160	12.090	9.5360	13.960
Cr	267.716	16.904	13.355	12.334
Cu	324.754	105.88	115.51	109.67
Fe	261.382	5.4264	8.3762	8.9115
K	728.181	100.93	88.515	115.24
Li	610.365	781.95	784.66	769.91
Mg	279.078	0.80634	0.078699	0.61071
Mn	293.305	2.2250	8.7988	7.3872
Mo	202.032	35.155	32.664	28.356
Na	589.592	1375.3	1277.9	1292.7
Na	568.821	-488.96	-482.30	-529.27
Ni	221.648	0.15989	-1.1015	-1.8161
Pb	220.353	-2.2365	-1.1985	-0.63840
Sb	217.582	-0.48086	0.91316	-1.9073
Se	196.026	1.3052	2.5808	1.8647
Si	251.611	37.139	30.203	30.675
Sn	189.927	0.55883	0.88270	0.48908
Sr	216.596	0.25238	-3.4051	1.1576
Ti	322.284	86.443	85.093	84.747
Tl	190.794	10.973	9.4649	8.6750
V	289.164	4.1379	3.5842	5.4136
Y	361.104	189268	190609	189192
Zn	206.200	1.3364	1.9619	0.84418
Zr	257.147	22.045	25.930	20.603

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000146u	ppm	0.000058	39.7	-19.835	-0.000146 ppm	Y 361.104	-0.00015
Al	237.312	-0.004397u	ppm	0.004210	95.7	-2.1129	-0.004397 ppm	Y 361.104	-0.00440
As	188.980	0.007753	ppm	0.005199	67.1	1.3970	0.007753 ppm	Y 361.104	0.00775
B	249.772	0.020135	ppm	0.001663	8.3	223.94	0.020135 ppm	Y 361.104	0.02013
Ba	233.527	0.000031u	ppm	0.000115	375.3	79.652	0.000031 ppm	Y 361.104	0.00003
Be	234.861	0.000047u	ppm	0.000058	124.5	-1.6145	0.000047 ppm	Y 361.104	0.00005
Ca	315.887	-0.000442u	ppm	0.000148	33.5	144.47	-0.000442 ppm	Y 361.104	-0.00044
Cd	228.802	0.000102u	ppm	0.000198	193.4	0.89554	0.000102 ppm	Y 361.104	0.00010
Co	231.160	0.000510	ppm	0.000481	94.3	11.862	0.000510 ppm	Y 361.104	0.00051
Cr	267.716	0.000367	ppm	0.000091	24.7	14.198	0.000367 ppm	Y 361.104	0.00037
Cu	324.754	-0.000002u	ppm	0.000151	9195.2	110.35	-0.000002 ppm	Y 361.104	0.00000
Fe	261.382	0.001528	ppm	0.001303	85.3	7.5714	0.001528 ppm	Y 361.104	0.00153

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
K	728.181	0.014824	ppm	0.009168	61.8	101.56	0.014824 ppm	Y 361.104	0.01482
Li	610.365	-0.000867u	ppm	0.000192	22.1	778.84	-0.000867 ppm	Y 361.104	-0.00087
Mg	279.078	-0.000109u	ppm	0.000440	403.0	0.49858	-0.000109 ppm	Y 361.104	-0.00011
Mn	293.305	-0.000073u	ppm	0.000297	407.4	6.1370	-0.000073 ppm	Y 361.104	-0.00007
Mo	202.032	0.007098	ppm	0.000989	13.9	32.058	0.007098 ppm	Y 361.104	0.00710
Na	589.592	0.000690	ppm	0.000396	57.4	1315.3	0.000690 ppm	Y 361.104	0.00069
Ni	221.648	-0.000289u	ppm	0.000823	284.3	-0.91923	-0.000289 ppm	Y 361.104	-0.00029
Pb	220.353	0.001081	ppm	0.000590	54.6	-1.3578	0.001081 ppm	Y 361.104	0.00108
Sb	217.582	0.001020u	ppm	0.002838	278.3	-0.49165	0.001020 ppm	Y 361.104	0.00102
Se	196.026	0.006563	ppm	0.003048	46.4	1.9169	0.006563 ppm	Y 361.104	0.00656
Si	251.611	0.002024	ppm	0.002060	101.7	32.672	0.002024 ppm	Y 361.104	0.00202
Sn	189.927	0.000874	ppm	0.000344	39.4	0.64354	0.000874 ppm	Y 361.104	0.00087
Sr	216.596	-0.000006u	ppm	0.000554	9906.0	-0.66505	-0.000006 ppm	Y 361.104	-0.00001
Ti	322.284	0.000355	ppm	0.000124	35.0	85.428	0.000355 ppm	Y 361.104	0.00036
Tl	190.794	0.029222	ppm	0.003210	11.0	9.7044	0.029222 ppm	Y 361.104	0.029222
V	289.164	0.000694	ppm	0.000152	21.8	4.3786	0.000694 ppm	Y 361.104	0.00069
Zn	206.200	0.000164u	ppm	0.000866	529.2	1.3808	0.000164 ppm	Y 361.104	0.00016
Zr	257.147	0.000954	ppm	0.000308	32.2	22.859	0.000954 ppm	Y 361.104	0.00095

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.99449	189690	796.837	0.4

Q1482124 BLA02 (Samp) **3/29/03, 10:29:59 AM** **Rack 2, Tube 81**
Weight: 1 Volume: 1 Dilution: 1

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-17.548	-22.561	-19.282
Al	237.312	10.618	10.579	15.695
As	188.980	-1.8002	0.72251	-0.56180
B	249.772	593.43	590.83	582.35
Ba	233.527	94.523	89.171	91.170
Be	234.861	-5.5964	-3.2016	-4.4266
Ca	315.887	413.16	405.05	409.38
Cd	228.802	-0.25401	1.0990	3.1434
Co	231.160	7.5956	8.5108	10.808
Cr	267.716	9.3873	10.050	10.940
Cu	324.754	104.13	112.06	107.65
Fe	261.382	12.915	13.188	10.235
K	728.181	222.88	211.63	233.01
Li	610.365	778.97	798.22	805.96

El	Wavelen.	Replicates Intensity (c/s)		
Mg	279.078	11.557	11.456	8.3466
Mn	293.305	6.3847	5.9489	6.7530
Mo	202.032	7.6069	4.8079	6.3500
Na	589.592	20904	20977	20993
Na	568.821	-453.64	-469.72	-457.33
Ni	221.648	-1.5294	-0.40516	-1.4490
Pb	220.353	0.59727	-5.3255	-0.53693
Sb	217.582	-3.8442	-1.1049	-4.4133
Se	196.026	1.0178	1.6282	2.0593
Si	251.611	123.12	127.74	128.08
Sn	189.927	0.62888	1.2697	0.79209
Sr	216.596	3.6836	2.0771	3.9666
Ti	322.284	82.955	82.005	76.001
Tl	190.794	3.9469	3.5379	2.8054
V	289.164	4.3490	0.22234	1.5163
Y	361.104	191409	192602	191926
Zn	206.200	7.3670	8.9326	10.036
Zr	257.147	16.280	18.758	14.359

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000144u	ppm	0.000081	56.1	-19.797	-0.000144 ppm	Y 361.104	1.0000
Al	237.312	0.025332	ppm	0.006070	24.0	12.297	0.025332 ppm	Y 361.104	1.0000
As	188.980	0.000512u	ppm	0.004701	918.1	-0.54650	0.000512 ppm	Y 361.104	1.0000
B	249.772	0.054445	ppm	0.000545	1.0	588.87	0.054445 ppm	Y 361.104	1.0000
Ba	233.527	0.000414	ppm	0.000087	20.9	91.621	0.000414 ppm	Y 361.104	1.0000
Be	234.861	-0.000010u	ppm	0.000025	238.6	-4.4082	-0.000010 ppm	Y 361.104	1.0000
Ca	315.887	0.051248	ppm	0.000793	1.5	409.19	0.051248 ppm	Y 361.104	1.0000
Cd	228.802	0.000159u	ppm	0.000249	157.1	1.3295	0.000159 ppm	Y 361.104	1.0000
Co	231.160	-0.000089u	ppm	0.000359	404.8	8.9716	-0.000089 ppm	Y 361.104	1.0000
Cr	267.716	0.000213	ppm	0.000029	13.8	10.126	0.000213 ppm	Y 361.104	1.0000
Cu	324.754	-0.000075u	ppm	0.000123	164.9	107.95	-0.000075 ppm	Y 361.104	1.0000
Fe	261.382	0.004677	ppm	0.001133	24.2	12.113	0.004677 ppm	Y 361.104	1.0000
K	728.181	0.097716	ppm	0.007328	7.5	222.51	0.097716 ppm	Y 361.104	1.0000
Li	610.365	-0.000472u	ppm	0.000340	72.0	794.38	-0.000472 ppm	Y 361.104	1.0000
Mg	279.078	0.011531	ppm	0.002134	18.5	10.453	0.011531 ppm	Y 361.104	1.0000
Mn	293.305	-0.000054u	ppm	0.000035	64.5	6.3622	-0.000054 ppm	Y 361.104	1.0000
Mo	202.032	-0.000323u	ppm	0.000403	124.9	6.2549	-0.000323 ppm	Y 361.104	1.0000
Na	589.592	0.14888	ppm	0.000356	0.2	20958	0.14888 ppm	Y 361.104	1.0000
Na	568.821	1.0198	ppm	0.030371	3.0	-460.23	1.0198 ppm	Y 361.104	1.0000

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ni	221.648	-0.000540u	ppm	0.000516	95.5	-1.1279	-0.000540 ppm	Y 361.104	1.0000
Pb	220.353	0.000772u	ppm	0.002287	296.3	-1.7550	0.000772 ppm	Y 361.104	1.0000
Sb	217.582	-0.004272u	ppm	0.003560	83.3	-3.1208	-0.004272 ppm	Y 361.104	1.0000
Se	196.026	0.004902	ppm	0.002495	50.9	1.5684	0.004902 ppm	Y 361.104	1.0000
Si	251.611	0.051790	ppm	0.001475	2.8	126.31	0.051790 ppm	Y 361.104	1.0000
Sn	189.927	0.001289	ppm	0.000546	42.3	0.89690	0.001289 ppm	Y 361.104	1.0000
Sr	216.596	0.000890	ppm	0.000234	26.3	3.2424	0.000890 ppm	Y 361.104	1.0000
Ti	322.284	-0.000346u	ppm	0.000523	151.4	80.320	-0.000346 ppm	Y 361.104	1.0000
Tl	190.794	0.011965	ppm	0.001590	13.3	3.4300	0.011965 ppm	Y 361.104	1.0000
V	289.164	0.000310	ppm	0.000341	110.1	2.0292	0.000310 ppm	Y 361.104	1.0000
Zn	206.200	0.011604	ppm	0.002073	17.9	8.7785	0.011604 ppm	Y 361.104	1.0000
Zr	257.147	0.000239	ppm	0.000246	102.8	16.466	0.000239 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0065	191979	598.711	0.3

Q1482125 LCS (Samp) **3/29/03, 10:33:55 AM** **Rack 2, Tube 82**
Weight: 1 Volume: 1 Dilution: 1

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	1846.2	1866.6	1856.9
Al	237.312	1074.2	1090.2	1095.9
As	188.980	559.15	559.17	559.17
B	249.772	12352	12629	12526
Ba	233.527	66219	67013	66535
Be	234.861	2547.8	2571.3	2557.2
Ca	315.887	530720	534056	532236
Cd	228.802	363.87	368.43	363.33
Co	231.160	2446.5	2462.7	2451.5
Cr	267.716	5706.3	5771.7	5742.4
Cu	324.754	8797.0	8934.6	8874.0
Fe	261.382	1519.0	1530.4	1528.3
K	728.181	142716	142946	143078
Li	610.365	41081	41230	41186
Mg	279.078	89473	90043	89924
Mn	293.305	6166.0	6217.7	6186.4
Mo	202.032	3844.1	3902.0	3920.7
Na	589.592	15246113	15336203	15303297
Na	568.821	28440	28574	28654
Ni	221.648	643.90	643.55	645.45

El	Wavelen.	Replicates Intensity (c/s)		
Pb	220.353	729.82	728.00	727.48
Sb	217.582	268.77	267.62	264.61
Se	196.026	442.55	450.13	451.75
Si	251.611	3086.3	3103.6	3099.8
Sn	189.927	-0.26900	0.093170	1.3163
Sr	216.596	4595.1	4632.9	4608.3
Ti	322.284	7472.4	7525.0	7505.2
Tl	190.794	1083.4	1111.7	1120.0
V	289.164	3288.0	3317.0	3318.3
Y	361.104	180065	179497	181145
Zn	206.200	350.87	356.75	347.81
Zr	257.147	333.51	277.57	226.39

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.059301	ppm	0.000324	0.5	1856.6	0.059301 ppm	Y 361.104	1.0000
Al	237.312	2.2349	ppm	0.023277	1.0	1086.8	2.2349 ppm	Y 361.104	1.0000
As	188.980	2.0860	ppm	0.000049	0.0	559.16	2.0860 ppm	Y 361.104	1.0000
B	249.772	1.1748	ppm	0.013185	1.1	12503	1.1748 ppm	Y 361.104	1.0000
Ba	233.527	2.1325	ppm	0.012820	0.6	66589	2.1325 ppm	Y 361.104	1.0000
Be	234.861	0.053096	ppm	0.000244	0.5	2558.8	0.053096 ppm	Y 361.104	1.0000
Ca	315.887	103.93	ppm	0.32624	0.3	532337	103.93 ppm	Y 361.104	1.0000
Cd	228.802	0.055160	ppm	0.000408	0.7	365.21	0.055160 ppm	Y 361.104	1.0000
Co	231.160	0.52629	ppm	0.001797	0.3	2453.6	0.52629 ppm	Y 361.104	1.0000
Cr	267.716	0.21708	ppm	0.001240	0.6	5740.2	0.21708 ppm	Y 361.104	1.0000
Cu	324.754	0.27250	ppm	0.002145	0.8	8868.5	0.27250 ppm	Y 361.104	1.0000
Fe	261.382	1.0593	ppm	0.004214	0.4	1525.9	1.0593 ppm	Y 361.104	1.0000
K	728.181	93.780	ppm	0.11548	0.1	142913	93.780 ppm	Y 361.104	1.0000
Li	610.365	1.0165	ppm	0.001875	0.2	41166	1.0165 ppm	Y 361.104	1.0000
Mg	279.078	105.02	ppm	0.35165	0.3	89813	105.02 ppm	Y 361.104	1.0000
Mn	293.305	0.53075	ppm	0.002236	0.4	6190.0	0.53075 ppm	Y 361.104	1.0000
Mo	202.032	1.1163	ppm	0.011486	1.0	3888.9	1.1163 ppm	Y 361.104	1.0000
Na	589.592	106.56	ppm	0.29749	0.3	15295204	106.56 ppm	Y 361.104	1.0000
Na	568.821	105.04	ppm	0.38911	0.4	28556	105.04 ppm	Y 361.104	1.0000
Ni	221.648	0.52778	ppm	0.000832	0.2	644.30	0.52778 ppm	Y 361.104	1.0000
Pb	220.353	0.53391	ppm	0.000895	0.2	728.43	0.53391 ppm	Y 361.104	1.0000
Sb	217.582	0.54011	ppm	0.004318	0.8	267.00	0.54011 ppm	Y 361.104	1.0000
Se	196.026	2.1340	ppm	0.023404	1.1	448.14	2.1340 ppm	Y 361.104	1.0000
Si	251.611	1.6303	ppm	0.004850	0.3	3096.6	1.6303 ppm	Y 361.104	1.0000
Sn	189.927	0.000203u	ppm	0.001361	671.1	0.38016	0.000203 ppm	Y 361.104	1.0000

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Sr	216.596	1.0569	ppm	0.004400	0.4	4612.1	1.0569 ppm	Y 361.104	1.0000
Ti	322.284	1.0283	ppm	0.003685	0.4	7500.9	1.0283 ppm	Y 361.104	1.0000
Tl	190.794	3.0386	ppm	0.052708	1.7	1105.1	3.0386 ppm	Y 361.104	1.0000
V	289.164	0.53659	ppm	0.002764	0.5	3307.8	0.53659 ppm	Y 361.104	1.0000
Zn	206.200	0.54114	ppm	0.007029	1.3	351.81	0.54114 ppm	Y 361.104	1.0000
Zr	257.147	0.030276	ppm	0.005983	19.8	279.16	0.030276 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.94492	180236	837.099	0.5

A623861 1:5 (Samp) 3/29/03, 10:37:51 AM Rack 2, Tube 83
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-17.771	-25.980	-29.614	
Al	237.312	17.149	19.902	20.969	
As	188.980	-3.4402	-0.92412	-2.6864	
B	249.772	1870.4	1879.2	1880.5	
Ba	233.527	2338.3	2344.2	2362.7	
Be	234.861	0.56982	-4.8322	-4.0703	
Ca	315.887	2276278	2292547	2291755	
Cd	228.802	0.46669	-2.1835	-0.99514	
Co	231.160	7.0646	6.5745	10.225	
Cr	267.716	20.649	14.225	12.417	
Cu	324.754	301.48	304.66	305.04	
Fe	261.382	31.991	33.152	31.396	
K	728.181	32668	32673	32857	
Li	610.365	-5153.8	-5145.6	-5163.3	
Mg	279.078	67.943	67.459	67.138	
Mn	293.305	13.358	13.035	18.948	
Mo	202.032	96.854	92.184	89.805	
Na	589.592	12214377	12278112	12327121	
Na	568.821	22681	22765	22790	
Ni	221.648	0.79032	0.85859	3.5005	
Pb	220.353	-1.6787	-4.3008	-5.1301	
Sb	217.582	-0.36501	0.75456	1.9521	
Se	196.026	1667.6	1697.7	1705.7	
Si	251.611	1540.8	1541.7	1551.8	
Sn	189.927	1.1518	1.2477	-1.6414	
Sr	216.596	2001.7	2019.9	2021.6	

El	Wavelen.	Replicates Intensity (c/s)			
Ti	322.284	84.058	74.597	78.149	
Tl	190.794	7.8163	4.9988	5.0988	
V	289.164	11.189	5.2167	8.9254	
Y	361.104	177835	177685	178010	
Zn	206.200	5.7554	1.1237	4.2645	
Zr	257.147	29.692	27.963	31.267	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000295u	ppm	0.000192	65.2	-24.455	-0.001475 ppm	Y 361.104	1.0000
Al	237.312	0.039611	ppm	0.004066	10.3	19.340	0.19805 ppm	Y 361.104	1.0000
As	188.980	-0.006223u	ppm	0.004812	77.3	-2.3502	-0.031113 ppm	Y 361.104	1.0000
B	249.772	0.17552	ppm	0.000517	0.3	1876.7	0.87758 ppm	Y 361.104	1.0000
Ba	233.527	0.072772	ppm	0.000407	0.6	2348.4	0.36386 ppm	Y 361.104	1.0000
Be	234.861	0.000025u	ppm	0.000060	238.6	-2.7776	0.000127 ppm	Y 361.104	1.0000
Ca	315.887	446.55	ppm	1.7912	0.4	2286860	2232.8 ppm	Y 361.104	1.0000
Cd	228.802	-0.000173u	ppm	0.000194	111.6	-0.90400	-0.000867 ppm	Y 361.104	1.0000
Co	231.160	-0.000829u	ppm	0.000429	51.8	7.9545	-0.004143 ppm	Y 361.104	1.0000
Cr	267.716	0.000427	ppm	0.000164	38.4	15.764	0.002134 ppm	Y 361.104	1.0000
Cu	324.754	0.006011	ppm	0.000061	1.0	303.73	0.030053 ppm	Y 361.104	1.0000
Fe	261.382	0.018601	ppm	0.000620	3.3	32.180	0.093007 ppm	Y 361.104	1.0000
K	728.181	22.151	ppm	0.072144	0.3	32733	110.76 ppm	Y 361.104	1.0000
Li	610.365	-0.019809u	ppm	0.000217	1.1	-5154.3	-0.099046 ppm	Y 361.104	1.0000
Mg	279.078	0.078255	ppm	0.000474	0.6	67.513	0.39127 ppm	Y 361.104	1.0000
Mn	293.305	0.000698	ppm	0.000285	40.9	15.114	0.003488 ppm	Y 361.104	1.0000
Mo	202.032	0.024610	ppm	0.001031	4.2	92.948	0.12305 ppm	Y 361.104	1.0000
Na	589.592	86.721	ppm	0.37567	0.4	12273203	433.61 ppm	Y 361.104	1.0000
Na	568.821	81.708	ppm	0.20586	0.3	22746	408.54 ppm	Y 361.104	1.0000
Ni	221.648	0.000602	ppm	0.001271	211.0	1.7165	0.003011 ppm	Y 361.104	1.0000
Pb	220.353	-0.000596u	ppm	0.001311	219.8	-3.7032	-0.002981 ppm	Y 361.104	1.0000
Sb	217.582	0.003583	ppm	0.002332	65.1	0.78054	0.017913 ppm	Y 361.104	1.0000
Se	196.026	8.0562	ppm	0.095901	1.2	1690.3	40.281 ppm	Y 361.104	1.0000
Si	251.611	0.80563	ppm	0.003236	0.4	1544.8	4.0282 ppm	Y 361.104	1.0000
Sn	189.927	0.000234u	ppm	0.002688	1151.2	0.25270	0.001168 ppm	Y 361.104	1.0000
Sr	216.596	0.46180	ppm	0.002522	0.5	2014.4	2.3090 ppm	Y 361.104	1.0000
Ti	322.284	-0.000565u	ppm	0.000663	117.4	78.934	-0.002825 ppm	Y 361.104	1.0000
Tl	190.794	0.018993	ppm	0.004395	23.1	5.9713	0.094963 ppm	Y 361.104	1.0000
V	289.164	0.001362	ppm	0.000487	35.8	8.4438	0.006811 ppm	Y 361.104	1.0000
Zn	206.200	0.003766u	ppm	0.003655	97.1	3.7145	0.018830 ppm	Y 361.104	1.0000
Zr	257.147	0.001710	ppm	0.000185	10.8	29.641	0.008548 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93238	177843	162.401	0.1

Q1482127 DUP02 1:5 (Samp) 3/29/03, 10:41:47 AM Rack 2, Tube 84
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-34.484	-24.030	-36.373
Al	237.312	16.151	17.594	20.845
As	188.980	-0.69074	0.45312	-1.9747
B	249.772	1796.0	1802.9	1807.3
Ba	233.527	2308.1	2333.8	2333.1
Be	234.861	-7.7915	-3.0018	-2.0734
Ca	315.887	2250109	2272089	2271014
Cd	228.802	-1.1861	-2.7719	0.14347
Co	231.160	7.3234	12.390	10.274
Cr	267.716	7.2605	15.339	15.979
Cu	324.754	301.02	307.11	312.50
Fe	261.382	30.826	31.568	29.697
K	728.181	32389	32436	32487
Li	610.365	-5069.0	-5068.9	-5086.4
Mg	279.078	68.031	68.388	67.403
Mn	293.305	11.605	25.375	20.093
Mo	202.032	72.445	71.575	75.336
Na	589.592	12141486	12207435	12206321
Na	568.821	22406	22555	22539
Ni	221.648	1.2157	0.19855	1.6433
Pb	220.353	1.9264	-3.1944	-4.0192
Sb	217.582	1.9708	-2.1836	-1.4316
Se	196.026	1618.2	1634.2	1635.2
Si	251.611	1515.8	1520.6	1521.1
Sn	189.927	0.072057	1.3949	2.0844
Sr	216.596	1994.6	1999.8	1999.4
Ti	322.284	80.127	75.866	79.665
Tl	190.794	0.96058	0.67708	-0.16465
V	289.164	18.492	9.4140	6.9126
Y	361.104	178121	178552	178398
Zn	206.200	2.1138	3.4138	2.6765
Zr	257.147	24.766	29.792	30.565

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000522u	ppm	0.000211	40.4	-31.629	-0.002611 ppm	Y 361.104	1.0000
Al	237.312	0.037256	ppm	0.004960	13.3	18.197	0.18628 ppm	Y 361.104	1.0000
As	188.980	-0.000210u	ppm	0.004527	2154.7	-0.73743	-0.001050 ppm	Y 361.104	1.0000
B	249.772	0.16850	ppm	0.000532	0.3	1802.1	0.84250 ppm	Y 361.104	1.0000
Ba	233.527	0.072023	ppm	0.000470	0.7	2325.0	0.36011 ppm	Y 361.104	1.0000
Be	234.861	-0.000006u	ppm	0.000063	1047.1	-4.2889	-0.000030 ppm	Y 361.104	1.0000
Ca	315.887	442.17	ppm	2.4199	0.5	2264404	2210.8 ppm	Y 361.104	1.0000
Cd	228.802	-0.000221u	ppm	0.000213	96.2	-1.2715	-0.001107 ppm	Y 361.104	1.0000
Co	231.160	-0.000367u	ppm	0.000551	150.0	9.9957	-0.001837 ppm	Y 361.104	1.0000
Cr	267.716	0.000317	ppm	0.000184	58.1	12.860	0.001584 ppm	Y 361.104	1.0000
Cu	324.754	0.006110	ppm	0.000179	2.9	306.88	0.030549 ppm	Y 361.104	1.0000
Fe	261.382	0.017578	ppm	0.000654	3.7	30.697	0.087889 ppm	Y 361.104	1.0000
K	728.181	21.953	ppm	0.032920	0.1	32438	109.77 ppm	Y 361.104	1.0000
Li	610.365	-0.019104u	ppm	0.000246	1.3	-5074.8	-0.095522 ppm	Y 361.104	1.0000
Mg	279.078	0.078754	ppm	0.000583	0.7	67.941	0.39377 ppm	Y 361.104	1.0000
Mn	293.305	0.001033	ppm	0.000596	57.7	19.024	0.005167 ppm	Y 361.104	1.0000
Mo	202.032	0.018907	ppm	0.000566	3.0	73.119	0.094536 ppm	Y 361.104	1.0000
Na	589.592	86.135	ppm	0.25114	0.3	12185080	430.68 ppm	Y 361.104	1.0000
Na	568.821	80.852	ppm	0.29490	0.4	22500	404.26 ppm	Y 361.104	1.0000
Ni	221.648	0.000051	ppm	0.000610	1204.9	1.0192	0.000253 ppm	Y 361.104	1.0000
Pb	220.353	0.000804u	ppm	0.002343	291.5	-1.7624	0.004020 ppm	Y 361.104	1.0000
Sb	217.582	0.000909u	ppm	0.004455	490.3	-0.54814	0.004543 ppm	Y 361.104	1.0000
Se	196.026	7.7648	ppm	0.045398	0.6	1629.2	38.824 ppm	Y 361.104	1.0000
Si	251.611	0.79202	ppm	0.001552	0.2	1519.2	3.9601 ppm	Y 361.104	1.0000
Sn	189.927	0.001759u	ppm	0.001675	95.2	1.1838	0.008795 ppm	Y 361.104	1.0000
Sr	216.596	0.45803	ppm	0.000664	0.1	1997.9	2.2901 ppm	Y 361.104	1.0000
Ti	322.284	-0.000612u	ppm	0.000324	53.0	78.553	-0.003059 ppm	Y 361.104	1.0000
Tl	190.794	0.003914	ppm	0.001609	41.1	0.49100	0.019568 ppm	Y 361.104	1.0000
V	289.164	0.001870	ppm	0.000984	52.6	11.606	0.009349 ppm	Y 361.104	1.0000
Zn	206.200	0.002253	ppm	0.001008	44.7	2.7347	0.011266 ppm	Y 361.104	1.0000
Zr	257.147	0.001568	ppm	0.000352	22.4	28.374	0.007839 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93507	178357	218.024	0.1

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Q1482126 SPI02 1:5 (Samp) 3/29/03, 10:45:42 AM Rack 2, Tube 85
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	710.89	722.76	733.96
Al	237.312	444.94	451.78	440.62
As	188.980	228.13	230.19	229.48
B	249.772	6060.5	6123.4	6224.2
Ba	233.527	28625	28706	29061
Be	234.861	1021.0	1016.3	1012.8
Ca	315.887	2511000	2516069	2521836
Cd	228.802	144.87	145.25	147.47
Co	231.160	962.57	966.63	971.98
Cr	267.716	2242.5	2241.0	2245.6
Cu	324.754	3885.8	3899.8	3916.0
Fe	261.382	632.90	633.43	635.92
K	728.181	98375	98276	98878
Li	610.365	11034	11106	11148
Mg	279.078	35632	35753	35860
Mn	293.305	2464.4	2489.2	2491.3
Mo	202.032	1581.2	1601.5	1617.6
Na	589.592	18537098	18633458	18630888
Na	568.821	36006	36210	36221
Ni	221.648	253.71	250.16	254.86
Pb	220.353	285.48	284.52	286.19
Sb	217.582	110.27	106.72	107.51
Se	196.026	1908.0	1926.6	1926.5
Si	251.611	2025.4	2025.1	2007.1
Sn	189.927	1.3933	0.73601	-0.11141
Sr	216.596	3836.0	3840.8	3868.4
Ti	322.284	3052.2	3064.2	3062.6
Tl	190.794	410.52	422.56	428.27
V	289.164	1316.8	1326.9	1319.8
Y	361.104	175242	176160	175804
Zn	206.200	145.23	135.19	139.34
Zr	257.147	42.979	50.803	45.015

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.023395	ppm	0.000366	1.6	722.54	0.11697 ppm	Y 361.104	1.0000
Al	237.312	0.91658	ppm	0.011610	1.3	445.78	4.5829 ppm	Y 361.104	1.0000
As	188.980	0.85678	ppm	0.003899	0.5	229.26	4.2839 ppm	Y 361.104	1.0000

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
B	249.772	0.57610	ppm	0.007765	1.3	6136.0	2.8805 ppm	Y 361.104	1.0000
Ba	233.527	0.92079	ppm	0.007434	0.8	28797	4.6039 ppm	Y 361.104	1.0000
Be	234.861	0.021148	ppm	0.000085	0.4	1016.7	0.10574 ppm	Y 361.104	1.0000
Ca	315.887	491.36	ppm	1.0588	0.2	2516301	2456.8 ppm	Y 361.104	1.0000
Cd	228.802	0.022032	ppm	0.000205	0.9	145.86	0.11016 ppm	Y 361.104	1.0000
Co	231.160	0.20567	ppm	0.001022	0.5	967.06	1.0284 ppm	Y 361.104	1.0000
Cr	267.716	0.084725	ppm	0.000089	0.1	2243.1	0.42363 ppm	Y 361.104	1.0000
Cu	324.754	0.11792	ppm	0.000470	0.4	3900.5	0.58961 ppm	Y 361.104	1.0000
Fe	261.382	0.43794	ppm	0.001120	0.3	634.08	2.1897 ppm	Y 361.104	1.0000
K	728.181	65.459	ppm	0.20855	0.3	98510	327.29 ppm	Y 361.104	1.0000
Li	610.365	0.39038	ppm	0.001408	0.4	11096	1.9519 ppm	Y 361.104	1.0000
Mg	279.078	41.802	ppm	0.13338	0.3	35748	209.01 ppm	Y 361.104	1.0000
Mn	293.305	0.21242	ppm	0.001282	0.6	2481.7	1.0621 ppm	Y 361.104	1.0000
Mo	202.032	0.45806	ppm	0.005247	1.1	1600.1	2.2903 ppm	Y 361.104	1.0000
Na	589.592	128.13	ppm	0.35832	0.3	18600482	640.66 ppm	Y 361.104	1.0000
Na	568.821	129.76	ppm	0.43649	0.3	36146	648.81 ppm	Y 361.104	1.0000
Ni	221.648	0.20680	ppm	0.002015	1.0	252.91	1.0340 ppm	Y 361.104	1.0000
Pb	220.353	0.21047	ppm	0.000608	0.3	285.40	1.0524 ppm	Y 361.104	1.0000
Sb	217.582	0.22000	ppm	0.003759	1.7	108.17	1.1000 ppm	Y 361.104	1.0000
Se	196.026	9.1528	ppm	0.051008	0.6	1920.4	45.764 ppm	Y 361.104	1.0000
Si	251.611	1.0578	ppm	0.005576	0.5	2019.2	5.2888 ppm	Y 361.104	1.0000
Sn	189.927	0.000827u	ppm	0.001236	149.4	0.67265	0.004136 ppm	Y 361.104	1.0000
Sr	216.596	0.88212	ppm	0.004010	0.5	3848.4	4.4106 ppm	Y 361.104	1.0000
Ti	322.284	0.41265	ppm	0.000904	0.2	3059.7	2.0632 ppm	Y 361.104	1.0000
Tl	190.794	1.1577	ppm	0.024905	2.2	420.45	5.7884 ppm	Y 361.104	1.0000
V	289.164	0.21433	ppm	0.000837	0.4	1321.2	1.0716 ppm	Y 361.104	1.0000
Zn	206.200	0.21404	ppm	0.007802	3.6	139.92	1.0702 ppm	Y 361.104	1.0000
Zr	257.147	0.003849	ppm	0.000453	11.8	46.266	0.019246 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD (int)	%RSD
Y	361.104	0.92133	175735	462.820	0.3

Q1482128 SPI03 1:5 (Samp) 3/29/03, 10:49:38 AM Rack 2, Tube 86
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	1236.8	1249.5	1248.4
Al	237.312	225.10	224.37	222.29
As	188.980	223.23	221.53	226.12
B	249.772	5905.6	6001.8	6026.4

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El	Wavelen.	Replicates Intensity (c/s)		
Ba	233.527	8605.9	8634.1	8642.4
Be	234.861	19239	19348	19382
Ca	315.887	2262769	2271352	2282980
Cd	228.802	282.88	282.49	286.13
Co	231.160	217.70	216.39	215.84
Cr	267.716	2171.7	2184.6	2203.6
Cu	324.754	1685.9	1694.5	1700.3
Fe	261.382	82.996	88.455	90.293
K	728.181	33193	33195	33417
Li	610.365	-5062.3	-5062.6	-5135.2
Mg	279.078	67.790	70.666	67.507
Mn	293.305	6359.1	6388.5	6417.8
Mo	202.032	79.298	77.063	75.572
Na	589.592	12204258	12252518	12231829
Na	568.821	22540	22649	22651
Ni	221.648	49.798	50.702	49.401
Pb	220.353	549.71	549.55	547.14
Sb	217.582	404.36	409.53	403.72
Se	196.026	1712.1	1725.0	1736.8
Si	251.611	1545.0	1541.8	1560.9
Sn	189.927	0.48933	0.57435	0.51211
Sr	216.596	1997.5	2004.8	2003.8
Ti	322.284	80.158	80.791	78.509
Tl	190.794	129.91	134.98	133.29
V	289.164	5012.4	5045.1	5048.1
Y	361.104	177945	178145	178861
Zn	206.200	27.958	30.780	29.956
Zr	257.147	26.948	26.440	27.544

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.039974	ppm	0.000223	0.6	1244.9	0.19987 ppm	Y 361.104	1.0000
Al	237.312	0.46190	ppm	0.003013	0.7	223.92	2.3095 ppm	Y 361.104	1.0000
As	188.980	0.83597	ppm	0.008650	1.0	223.63	4.1799 ppm	Y 361.104	1.0000
B	249.772	0.56108	ppm	0.006003	1.1	5977.9	2.8054 ppm	Y 361.104	1.0000
Ba	233.527	0.27400	ppm	0.000613	0.2	8627.5	1.3700 ppm	Y 361.104	1.0000
Be	234.861	0.39929	ppm	0.001533	0.4	19323	1.9965 ppm	Y 361.104	1.0000
Ca	315.887	443.72	ppm	1.9809	0.4	2272367	2218.6 ppm	Y 361.104	1.0000
Cd	228.802	0.042153	ppm	0.000292	0.7	283.84	0.21076 ppm	Y 361.104	1.0000
Co	231.160	0.040944	ppm	0.000206	0.5	216.64	0.20472 ppm	Y 361.104	1.0000

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Cr	267.716	0.082575	ppm	0.000608	0.7	2186.6	0.41288 ppm	Y 361.104	1.0000
Cu	324.754	0.049268	ppm	0.000225	0.5	1693.6	0.24634 ppm	Y 361.104	1.0000
Fe	261.382	0.058722	ppm	0.002634	4.5	87.248	0.29361 ppm	Y 361.104	1.0000
K	728.181	22.511	ppm	0.086229	0.4	33268	112.56 ppm	Y 361.104	1.0000
Li	610.365	-0.018957u	ppm	0.001028	5.4	-5086.7	-0.094783 ppm	Y 361.104	1.0000
Mg	279.078	0.079835	ppm	0.002044	2.6	68.654	0.39917 ppm	Y 361.104	1.0000
Mn	293.305	0.54778	ppm	0.002522	0.5	6388.5	2.7389 ppm	Y 361.104	1.0000
Mo	202.032	0.020113	ppm	0.000539	2.7	77.311	0.10056 ppm	Y 361.104	1.0000
Na	589.592	86.431	ppm	0.16096	0.2	12229535	432.15 ppm	Y 361.104	1.0000
Na	568.821	81.256	ppm	0.22849	0.3	22614	406.28 ppm	Y 361.104	1.0000
Ni	221.648	0.040309	ppm	0.000548	1.4	49.967	0.20154 ppm	Y 361.104	1.0000
Pb	220.353	0.40126	ppm	0.001045	0.3	548.80	2.0063 ppm	Y 361.104	1.0000
Sb	217.582	0.81903	ppm	0.006413	0.8	405.87	4.0951 ppm	Y 361.104	1.0000
Se	196.026	8.2197	ppm	0.058893	0.7	1724.6	41.099 ppm	Y 361.104	1.0000
Si	251.611	0.80801	ppm	0.005448	0.7	1549.3	4.0401 ppm	Y 361.104	1.0000
Sn	189.927	0.000699	ppm	0.000072	10.3	0.52527	0.003495 ppm	Y 361.104	1.0000
Sr	216.596	0.45897	ppm	0.000910	0.2	2002.0	2.2949 ppm	Y 361.104	1.0000
Ti	322.284	-0.000367u	ppm	0.000163	44.5	79.820	-0.001835 ppm	Y 361.104	1.0000
Tl	190.794	0.36575	ppm	0.007105	1.9	132.73	1.8288 ppm	Y 361.104	1.0000
V	289.164	0.81445	ppm	0.003194	0.4	5035.2	4.0722 ppm	Y 361.104	1.0000
Zn	206.200	0.043572	ppm	0.002243	5.1	29.565	0.21786 ppm	Y 361.104	1.0000
Zr	257.147	0.001405	ppm	0.000062	4.4	26.977	0.007026 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93486	178317	481.780	0.3

Q1482129 DPS03 1:5 (Samp) **3/29/03, 10:53:34 AM** **Rack 2, Tube 87**
Weight: 1 **Volume: 1** **Dilution: 5**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	1211.5	1226.6	1220.7
Al	237.312	221.13	216.87	224.16
As	188.980	219.09	222.66	224.52
B	249.772	5864.1	6033.1	6025.2
Ba	233.527	8552.2	8583.8	8594.6
Be	234.861	19158	19289	19322
Ca	315.887	2257793	2268669	2278518
Cd	228.802	278.52	281.61	281.44
Co	231.160	212.18	217.02	214.16
Cr	267.716	2164.6	2176.2	2185.1

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VLS

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El	Wavelen.	Replicates Intensity (c/s)		
Cu	324.754	1675.2	1673.9	1684.7
Fe	261.382	83.436	84.210	91.159
K	728.181	33201	33510	33519
Li	610.365	-5061.5	-5078.6	-5093.2
Mg	279.078	73.356	72.609	71.674
Mn	293.305	6362.1	6407.7	6404.1
Mo	202.032	69.693	68.639	70.450
Na	589.592	12172808	12238739	12229431
Na	568.821	22616	22776	22731
Ni	221.648	48.228	54.259	50.690
Pb	220.353	543.09	548.49	550.14
Sb	217.582	401.75	398.43	407.56
Se	196.026	1699.4	1720.9	1736.4
Si	251.611	1520.0	1532.7	1535.9
Sn	189.927	1.3201	0.69482	1.0502
Sr	216.596	1988.1	2002.0	2000.1
Ti	322.284	79.470	67.648	77.321
Tl	190.794	125.13	131.70	132.33
V	289.164	5011.0	5016.6	5038.9
Y	361.104	178771	179709	179339
Zn	206.200	26.386	29.842	30.695
Zr	257.147	21.362	23.614	24.518

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s	Calc Conc.	IS	DF
Ag	328.068	0.039170	ppm	0.000240	0.6	1219.6	0.19585 ppm	Y 361.104	1.0000
Al	237.312	0.45530	ppm	0.007556	1.7	220.72	2.2765 ppm	Y 361.104	1.0000
As	188.980	0.83025	ppm	0.010278	1.2	222.09	4.1512 ppm	Y 361.104	1.0000
B	249.772	0.56073	ppm	0.008968	1.6	5974.2	2.8036 ppm	Y 361.104	1.0000
Ba	233.527	0.27237	ppm	0.000706	0.3	8576.9	1.3619 ppm	Y 361.104	1.0000
Be	234.861	0.39792	ppm	0.001786	0.4	19256	1.9896 ppm	Y 361.104	1.0000
Ca	315.887	442.93	ppm	2.0244	0.5	2268327	2214.7 ppm	Y 361.104	1.0000
Cd	228.802	0.041665	ppm	0.000253	0.6	280.53	0.20832 ppm	Y 361.104	1.0000
Co	231.160	0.040503	ppm	0.000527	1.3	214.45	0.20251 ppm	Y 361.104	1.0000
Cr	267.716	0.082146	ppm	0.000388	0.5	2175.3	0.41073 ppm	Y 361.104	1.0000
Cu	324.754	0.048782	ppm	0.000184	0.4	1677.9	0.24391 ppm	Y 361.104	1.0000
Fe	261.382	0.058036	ppm	0.002952	5.1	86.268	0.29018 ppm	Y 361.104	1.0000
K	728.181	22.606	ppm	0.12133	0.5	33410	113.03 ppm	Y 361.104	1.0000
Li	610.365	-0.018961u	ppm	0.000388	2.0	-5077.8	-0.094805 ppm	Y 361.104	1.0000
Mg	279.078	0.084386	ppm	0.000985	1.2	72.546	0.42193 ppm	Y 361.104	1.0000

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Mn	293.305	0.54803	ppm	0.002174	0.4	6391.3	2.7401 ppm	Y 361.104	1.0000
Mo	202.032	0.017893	ppm	0.000262	1.5	69.594	0.089467 ppm	Y 361.104	1.0000
Na	589.592	86.325	ppm	0.23727	0.3	12213659	431.63 ppm	Y 361.104	1.0000
Na	568.821	81.599	ppm	0.29742	0.4	22707	408.00 ppm	Y 361.104	1.0000
Ni	221.648	0.041223	ppm	0.002493	6.0	51.059	0.20612 ppm	Y 361.104	1.0000
Pb	220.353	0.40012	ppm	0.002683	0.7	547.24	2.0006 ppm	Y 361.104	1.0000
Sb	217.582	0.81241	ppm	0.009302	1.1	402.58	4.0621 ppm	Y 361.104	1.0000
Se	196.026	8.1924	ppm	0.088751	1.1	1718.9	40.962 ppm	Y 361.104	1.0000
Si	251.611	0.79755	ppm	0.004463	0.6	1529.5	3.9870 ppm	Y 361.104	1.0000
Sn	189.927	0.001513	ppm	0.000514	34.0	1.0217	0.007563 ppm	Y 361.104	1.0000
Sr	216.596	0.45775	ppm	0.001729	0.4	1996.7	2.2887 ppm	Y 361.104	1.0000
Ti	322.284	-0.001059u	ppm	0.000874	82.5	74.813	-0.005297 ppm	Y 361.104	1.0000
Tl	190.794	0.35749	ppm	0.010971	3.1	129.72	1.7875 ppm	Y 361.104	1.0000
V	289.164	0.81234	ppm	0.002383	0.3	5022.2	4.0617 ppm	Y 361.104	1.0000
Zn	206.200	0.042661	ppm	0.003528	8.3	28.974	0.21330 ppm	Y 361.104	1.0000
Zr	257.147	0.000979	ppm	0.000181	18.5	23.165	0.004894 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93988	179273	472.225	0.3

CCV (CCV) 3/29/03, 10:57:29 AM Rack 2, Tube 88

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	32164	32316	32096
Al	237.312	2469.7	2469.9	2476.0
As	188.980	1362.5	1373.5	1381.4
B	249.772	20766	20923	20995
	233.527	154913	155885	155927
Be	234.861	243833	245824	246308
Ca	315.887	259375	261302	261015
Cd	228.802	34953	35226	35178
Co	231.160	22998	23137	23146
Cr	267.716	133649	134520	134676
Cu	324.754	163482	163714	164103
Fe	261.382	7181.8	7222.3	7230.6
K	728.181	69525	69815	70262
Li	610.365	203407	204585	204680
	279.078	42384	42673	42709
	293.305	58558	59010	58973
Mo	202.032	3454.4	3525.6	3547.3

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El	Wavelen.	Replicates Intensity (c/s)		
Na	589.592	7342014	7372517	7381433
Na	568.821	12627	12643	12698
Ni	221.648	6101.8	6137.3	6141.4
Pb	220.353	6852.7	6913.3	6910.8
Sb	217.582	505.01	503.17	510.54
Se	196.026	1053.6	1066.4	1071.6
Si	251.611	9492.9	9546.3	9576.2
Sn	189.927	3047.3	3076.3	3078.6
Sr	216.596	21996	22250	22052
Ti	322.284	36072	36048	36087
Tl	190.794	1741.3	1775.4	1786.2
V	289.164	31479	31658	31642
Y	361.104	184411	183635	184619
Zn	206.200	3244.6	3257.8	3260.2
Zr	257.147	45551	45897	45906

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	1.0093	ppm	0.003576	0.4	32192	1.0093 ppm	Y 361.104	100.92895
Al	237.312	5.0639	ppm	0.007366	0.1	2471.9	5.0639 ppm	Y 361.104	101.27741
As	188.980	5.1161	ppm	0.035367	0.7	1372.4	5.1161 ppm	Y 361.104	102.32185
B	249.772	1.9658	ppm	0.011015	0.6	20895	1.9658 ppm	Y 361.104	98.29054
Ba	233.527	4.9850	ppm	0.018391	0.4	155575	4.9850 ppm	Y 361.104	99.69942
Be	234.861	5.0692	ppm	0.027105	0.5	245321	5.0692 ppm	Y 361.104	101.38351
Ca	315.887	50.870	ppm	0.20298	0.4	260564	50.870 ppm	Y 361.104	101.73993
Cd	228.802	5.1255	ppm	0.021221	0.4	35119	5.1255 ppm	Y 361.104	102.50927
Co	231.160	5.0055	ppm	0.017980	0.4	23094	5.0055 ppm	Y 361.104	100.10990
Cr	267.716	5.0821	ppm	0.020953	0.4	134281	5.0821 ppm	Y 361.104	101.64223
Cu	324.754	5.0928	ppm	0.009757	0.2	163766	5.0928 ppm	Y 361.104	101.85625
Fe	261.382	5.0301	ppm	0.018121	0.4	7211.6	5.0301 ppm	Y 361.104	100.60234
K	728.181	46.794	ppm	0.24363	0.5	69867	46.794 ppm	Y 361.104	93.58758
Li	610.365	4.9904	ppm	0.017354	0.3	204224	4.9904 ppm	Y 361.104	99.80711
Mg	279.078	49.801	ppm	0.20826	0.4	42588	49.801 ppm	Y 361.104	99.60144
Mn	293.305	5.0508	ppm	0.021555	0.4	58847	5.0508 ppm	Y 361.104	101.01537
Mo	202.032	1.0071	ppm	0.013976	1.4	3509.1	1.0071 ppm	Y 361.104	100.70801
Na	589.592	53.317	ppm	0.14398	0.3	7365322	53.317 ppm	Y 361.104	106.63482
Ni	221.648	5.0329	ppm	0.017901	0.4	6126.8	5.0329 ppm	Y 361.104	100.65750
Pb	220.353	5.0174	ppm	0.024948	0.5	6892.3	5.0174 ppm	Y 361.104	100.34730
Sb	217.582	1.0276	ppm	0.007717	0.8	506.24	1.0276 ppm	Y 361.104	102.76300
Se	196.026	5.0693	ppm	0.044126	0.9	1063.8	5.0693 ppm	Y 361.104	101.38614

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Si	251.611	5.0539	ppm	0.022409	0.4	9538.5	5.0539 ppm	Y 361.104	101.07735
Sn	189.927	5.0231	ppm	0.028540	0.6	3067.4	5.0231 ppm	Y 361.104	100.46155
Sr	216.596	5.0634	ppm	0.030575	0.6	22099	5.0634 ppm	Y 361.104	101.26746
Ti	322.284	4.9926	ppm	0.002719	0.1	36069	4.9926 ppm	Y 361.104	99.85158
Tl	190.794	4.8325	ppm	0.064478	1.3	1767.6	4.8325 ppm	Y 361.104	96.64961
V	289.164	5.1183	ppm	0.015987	0.3	31593	5.1183 ppm	Y 361.104	102.36613
Zn	206.200	5.0191	ppm	0.012934	0.3	3254.2	5.0191 ppm	Y 361.104	100.38251
Zr	257.147	5.1125	ppm	0.022616	0.4	45784	5.1125 ppm	Y 361.104	102.25017

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.96582	184221	518.631	0.3

BLA01 (CCB) 3/29/03, 11:01:24 AM Rack 2, Tube 89

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-23.939	-16.412	-10.263
Al	237.312	-2.6866	-1.2872	-3.3824
As	188.980	2.7255	0.64227	0.79632
B	249.772	292.02	266.73	245.86
Ba	233.527	78.797	81.303	79.981
Be	234.861	-1.9468	-1.1425	0.50663
Ca	315.887	149.38	149.78	147.22
Cd	228.802	0.82214	-0.21785	-1.2822
Co	231.160	13.786	10.043	9.7913
Cr	267.716	13.308	10.880	16.853
Cu	324.754	99.865	103.55	106.66
Fe	261.382	4.3287	7.9473	8.0495
K	728.181	115.16	107.94	100.85
Li	610.365	810.54	795.42	801.34
Mg	279.078	2.9309	3.0047	3.9322
Mn	293.305	8.3730	7.5432	10.347
Mo	202.032	33.483	28.908	22.615
Na	589.592	1335.3	1249.2	1260.4
Na	568.821	-493.24	-484.82	-504.17
Ni	221.648	-1.9654	-0.51999	-0.84897
Pb	220.353	1.0155	-1.3910	0.43851
Sb	217.582	-2.5224	-2.0889	-3.6698
Se	196.026	4.0200	1.9384	4.4357
Si	251.611	32.390	28.309	28.136
Sn	189.927	-0.94493	-0.73412	0.68198

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El	Wavelen.	Replicates Intensity (c/s)		
Sr	216.596	2.6084	2.6252	1.6980
Ti	322.284	91.788	85.256	93.333
Tl	190.794	12.457	8.5346	7.2873
V	289.164	0.57737	4.6305	4.2271
Y	361.104	189296	188998	189181
Zn	206.200	1.8391	0.90658	1.8287
Zr	257.147	22.429	22.227	17.916

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000053u	ppm	0.000217	412.2	-16.871	-0.000053 ppm	Y 361.104	-0.00005
Al	237.312	-0.005097u	ppm	0.002201	43.2	-2.4520	-0.005097 ppm	Y 361.104	-0.00510
As	188.980	0.007720	ppm	0.004326	56.0	1.3880	0.007720 ppm	Y 361.104	0.00772
B	249.772	0.024298	ppm	0.002173	8.9	268.20	0.024298 ppm	Y 361.104	0.02430
Ba	233.527	0.000043	ppm	0.000040	94.3	80.027	0.000043 ppm	Y 361.104	0.00004
Be	234.861	0.000062	ppm	0.000026	41.4	-0.86090	0.000062 ppm	Y 361.104	0.00006
Ca	315.887	0.000406	ppm	0.000269	66.2	148.79	0.000406 ppm	Y 361.104	0.00041
Cd	228.802	-0.000061u	ppm	0.000153	250.8	-0.22598	-0.000061 ppm	Y 361.104	-0.00006
Co	231.160	0.000392	ppm	0.000485	123.6	11.207	0.000392 ppm	Y 361.104	0.00039
Cr	267.716	0.000348	ppm	0.000114	32.7	13.680	0.000348 ppm	Y 361.104	0.00035
Cu	324.754	-0.000219u	ppm	0.000106	48.3	103.36	-0.000219 ppm	Y 361.104	-0.00022
Fe	261.382	0.000981u	ppm	0.001471	150.0	6.7751	0.000981 ppm	Y 361.104	0.00098
K	728.181	0.019223	ppm	0.004904	25.5	107.98	0.019223 ppm	Y 361.104	0.01922
Li	610.365	-0.000290u	ppm	0.000186	64.3	802.43	-0.000290 ppm	Y 361.104	-0.00029
Mg	279.078	0.003154	ppm	0.000653	20.7	3.2893	0.003154 ppm	Y 361.104	0.00315
Mn	293.305	0.000152	ppm	0.000124	81.5	8.7543	0.000152 ppm	Y 361.104	0.00015
Mo	202.032	0.006027	ppm	0.001569	26.0	28.335	0.006027 ppm	Y 361.104	0.00603
Na	589.592	0.000436	ppm	0.000353	81.1	1281.6	0.000436 ppm	Y 361.104	0.00044
Ni	221.648	-0.000445u	ppm	0.000623	140.0	-1.1115	-0.000445 ppm	Y 361.104	-0.00044
Pb	220.353	0.002082	ppm	0.000914	43.9	0.020977	0.002082 ppm	Y 361.104	0.00208
Sb	217.582	-0.003546u	ppm	0.001644	46.4	-2.7603	-0.003546 ppm	Y 361.104	-0.00355
Se	196.026	0.013942	ppm	0.006379	45.8	3.4647	0.013942 ppm	Y 361.104	0.01394Z
Si	251.611	0.000398u	ppm	0.001280	321.8	29.612	0.000398 ppm	Y 361.104	0.00040
Sn	189.927	-0.000725u	ppm	0.001449	199.9	-0.33236	-0.000725 ppm	Y 361.104	-0.00073
Sr	216.596	0.000676	ppm	0.000122	18.0	2.3105	0.000676 ppm	Y 361.104	0.00068
Ti	322.284	0.001008	ppm	0.000595	59.0	90.126	0.001008 ppm	Y 361.104	0.00101
Tl	190.794	0.028455	ppm	0.007416	26.1	9.4262	0.028455 ppm	Y 361.104	0.02845Z
V	289.164	0.000495	ppm	0.000361	72.9	3.1450	0.000495 ppm	Y 361.104	0.00049
Zn	206.200	0.000387u	ppm	0.000828	214.1	1.5248	0.000387 ppm	Y 361.104	0.00039
Zr	257.147	0.000732	ppm	0.000285	38.9	20.857	0.000732 ppm	Y 361.104	0.00073

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.99170	189159	150.018	0.1

A623014 20:100 (Samp) 3/29/03, 11:05:19 AM Rack 2, Tube 90
Weight: 20 Volume: 10 Dilution: 1

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	4.9687	4.9677	-11.544
Al	237.312	90.685	89.536	94.269
As	188.980	120.77	119.68	121.48
B	249.772	15355	15473	15543
Ba	233.527	1316.7	1333.9	1341.2
Be	234.861	-93.076	-72.265	-87.469
Ca	315.887	52752	53108	53264
Cd	228.802	-4.0582	-2.7844	0.14111
Co	231.160	45.447	41.761	48.044
Cr	267.716	498.60	512.77	508.92
Cu	324.754	23039	23163	23326
Fe	261.382	11593	11675	11711
K	728.181	15182	15278	15309
Li	610.365	1006.9	1020.7	1014.8
Mg	279.078	8448.9	8496.0	8533.1
Mn	293.305	1154.7	1154.6	1161.3
Mo	202.032	581.98	592.29	592.51
Na	589.592	32133986	31656936	31582472
Na	568.821	312382	313555	313645
Ni	221.648	619.78	624.81	624.36
Pb	220.353	7.9886	6.4861	4.9760
Sb	217.582	53.554	55.601	51.923
Se	196.026	0.97276	1.2571	1.2551
Si	251.611	10291	10395	10436
Sn	189.927	7.3122	6.6788	5.4096
Sr	216.596	244.92	245.82	248.05
Ti	322.284	198.56	199.50	190.10
Tl	190.794	4.0411	4.1434	3.7417
V	289.164	45.775	44.197	45.682
Y	361.104	170788	171646	172287
Zn	206.200	132.88	136.53	132.79
Zr	257.147	122.28	123.19	118.76

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.000438	ppm	0.000302	69.0	-0.53594	0.000219 ppm	Y 361.104	1.0000
Al	237.312	0.18870	ppm	0.005092	2.7	91.497	0.094348 ppm	Y 361.104	1.0000
As	188.980	0.45211	ppm	0.003368	0.7	120.64	0.22606 ppm	Y 361.104	1.0000
B	249.772	1.4549	ppm	0.008948	0.6	15457	0.72743 ppm	Y 361.104	1.0000
Ba	233.527	0.040138	ppm	0.000403	1.0	1330.6	0.020069 ppm	Y 361.104	1.0000
Be	234.861	-0.000501u	ppm	0.000222	44.4	-84.270	-0.000250 ppm	Y 361.104	1.0000
Ca	315.887	10.329	ppm	0.051262	0.5	53041	5.1647 ppm	Y 361.104	1.0000
Cd	228.802	0.000050u	ppm	0.000314	622.7	-2.2338	0.000025 ppm	Y 361.104	1.0000
Co	231.160	0.006477	ppm	0.000684	10.6	45.084	0.003239 ppm	Y 361.104	1.0000
Cr	267.716	0.019007	ppm	0.000277	1.5	506.76	0.009504 ppm	Y 361.104	1.0000
Cu	324.754	0.71819	ppm	0.004472	0.6	23176	0.35909 ppm	Y 361.104	1.0000
Fe	261.382	8.0890	ppm	0.041903	0.5	11660	4.0445 ppm	Y 361.104	1.0000
K	728.181	10.352	ppm	0.044811	0.4	15256	5.1762 ppm	Y 361.104	1.0000
Li	610.365	0.007807	ppm	0.000169	2.2	1014.1	0.003904 ppm	Y 361.104	1.0000
Mg	279.078	9.9292	ppm	0.049313	0.5	8492.6	4.9646 ppm	Y 361.104	1.0000
Mn	293.305	0.098706	ppm	0.000326	0.3	1156.9	0.049353 ppm	Y 361.104	1.0000
Mo	202.032	0.16725	ppm	0.001730	1.0	588.92	0.083626 ppm	Y 361.104	1.0000
Na	589.592	214.21ob	ppm	1.9528	0.9	31791130	107.11 ppm	Y 361.104	1.0000
Na	568.821	1131.9b	ppm	2.5395	0.2	313194	565.95 ppm	Y 361.104	1.0000
Ni	221.648	0.50406	ppm	0.002286	0.5	622.98	0.25203 ppm	Y 361.104	1.0000
Pb	220.353	0.007089	ppm	0.001096	15.5	6.4836	0.003545 ppm	Y 361.104	1.0000
Sb	217.582	0.11117	ppm	0.003709	3.3	53.692	0.055584 ppm	Y 361.104	1.0000
Se	196.026	0.002912	ppm	0.000780	26.8	1.1616	0.001456 ppm	Y 361.104	1.0000
Si	251.611	5.4979	ppm	0.039711	0.7	10374	2.7490 ppm	Y 361.104	1.0000
Sn	189.927	0.010433	ppm	0.001587	15.2	6.4669	0.005216 ppm	Y 361.104	1.0000
Sr	216.596	0.055444	ppm	0.000369	0.7	246.27	0.027722 ppm	Y 361.104	1.0000
Ti	322.284	0.015545	ppm	0.000719	4.6	196.05	0.007772 ppm	Y 361.104	1.0000
Tl	190.794	0.013646	ppm	0.000574	4.2	3.9754	0.006823 ppm	Y 361.104	1.0000
V	289.164	0.007359	ppm	0.000143	1.9	45.218	0.003679 ppm	Y 361.104	1.0000
Zn	206.200	0.20558	ppm	0.003302	1.6	134.07	0.10279 ppm	Y 361.104	1.0000
Zr	257.147	0.011216	ppm	0.000261	2.3	121.41	0.005608 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.89951	171574	752.444	0.4

A623623 1:5 (Samp) **3/29/03, 11:09:16 AM** **Rack 2, Tube 91**
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-20.183	-26.332	-20.780	
Al	237.312	9.2586	9.3328	11.728	
As	188.980	-1.0680	-0.21405	-1.7692	
B	249.772	27007	27079	27288	
Ba	233.527	177.67	182.70	178.91	
Be	234.861	-0.15248	-4.4251	-6.9763	
Ca	315.887	2194533	2217103	2216911	
Cd	228.802	1.4818	1.5859	7.4850	
Co	231.160	20.326	17.846	20.021	
Cr	267.716	22.285	23.456	17.121	
Cu	324.754	646.67	653.66	644.25	
Fe	261.382	55.440	58.360	57.833	
K	728.181	6532.5	6500.4	6525.8	
Li	610.365	-5916.7	-6008.2	-6042.9	
Mg	279.078	15512	15610	15597	
Mn	293.305	2221.1	2243.9	2239.9	
Mo	202.032	100.29	100.80	101.22	
Na	589.592	28563954	28654028	28597220	
Na	568.821	96290	96436	96421	
Ni	221.648	40.401	45.380	46.277	
Pb	220.353	-4.4843	-3.7230	-1.5950	
Sb	217.582	3.6423	2.6350	-0.32246	
Se	196.026	7955.4	7993.3	7994.3	
Si	251.611	5542.3	5508.5	5483.9	
Sn	189.927	1.0851	1.1310	1.1254	
Sr	216.596	1326.8	1339.4	1333.0	
Ti	322.284	87.962	92.001	77.844	
Tl	190.794	-0.95183	-0.61101	-1.2372	
V	289.164	5.1395	0.43883	9.6072	
Y	361.104	174577	173982	174321	
Zn	206.200	7.7673	7.0038	8.1026	
Zr	257.147	71.835	66.983	71.743	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000241u	ppm	0.000108	44.7	-22.432	-0.001204 ppm	Y 361.104	1.0000
Al	237.312	0.021107	ppm	0.002897	13.7	10.106	0.10553 ppm	Y 361.104	1.0000
As	188.980	-0.001251u	ppm	0.002903	232.1	-1.0171	-0.006254 ppm	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
B	249.772	2.5491	ppm	0.013707	0.5	27125	12.746 ppm	Y 361.104	1.0000
Ba	233.527	0.003240	ppm	0.000084	2.6	179.76	0.016202 ppm	Y 361.104	1.0000
Be	234.861	0.000006u	ppm	0.000071	1266.6	-3.8513	0.000028 ppm	Y 361.104	1.0000
Ca	315.887	431.45	ppm	2.5339	0.6	2209515	2157.2 ppm	Y 361.104	1.0000
Cd	228.802	0.000474	ppm	0.000501	105.6	3.5176	0.002372 ppm	Y 361.104	1.0000
Co	231.160	0.001624	ppm	0.000293	18.0	19.398	0.008122 ppm	Y 361.104	1.0000
Cr	267.716	0.000618	ppm	0.000128	20.6	20.954	0.003089 ppm	Y 361.104	1.0000
Cu	324.754	0.016727	ppm	0.000152	0.9	648.19	0.083633 ppm	Y 361.104	1.0000
Fe	261.382	0.036000	ppm	0.001080	3.0	57.211	0.18000 ppm	Y 361.104	1.0000
K	728.181	4.4049	ppm	0.011590	0.3	6519.6	22.025 ppm	Y 361.104	1.0000
Li	610.365	-0.044504u	ppm	0.001595	3.6	-5989.2	-0.22252 ppm	Y 361.104	1.0000
Mg	279.078	18.210	ppm	0.062422	0.3	15573	91.049 ppm	Y 361.104	1.0000
Mn	293.305	0.19125	ppm	0.001045	0.5	2235.0	0.95624 ppm	Y 361.104	1.0000
Mo	202.032	0.026859	ppm	0.000134	0.5	100.77	0.13429 ppm	Y 361.104	1.0000
Na	589.592	193.42o	ppm	0.29723	0.2	28605066	967.10 ppm	Y 361.104	1.0000
Na	568.821	347.31	ppm	0.28965	0.1	96382	1736.5 ppm	Y 361.104	1.0000
Ni	221.648	0.032036	ppm	0.002603	8.1	44.019	0.16018 ppm	Y 361.104	1.0000
Pb	220.353	-0.000271u	ppm	0.001089	401.5	-3.2674	-0.001356 ppm	Y 361.104	1.0000
Sb	217.582	0.006039	ppm	0.004147	68.7	1.9849	0.030196 ppm	Y 361.104	1.0000
Se	196.026	38.047	ppm	0.10562	0.3	7981.0	190.24 ppm	Y 361.104	1.0000
Si	251.611	2.9138	ppm	0.015568	0.5	5511.6	14.569 ppm	Y 361.104	1.0000
Sn	189.927	0.001645	ppm	0.000041	2.5	1.1138	0.008223 ppm	Y 361.104	1.0000
Sr	216.596	0.30566	ppm	0.001446	0.5	1333.1	1.5283 ppm	Y 361.104	1.0000
Ti	322.284	0.000428u	ppm	0.001012	236.6	85.936	0.002139 ppm	Y 361.104	1.0000
Tl	190.794	-0.000087u	ppm	0.000862	988.4	-0.93333	-0.000436 ppm	Y 361.104	1.0000
V	289.164	0.001201	ppm	0.000740	61.6	5.0618	0.006005 ppm	Y 361.104	1.0000
Zn	206.200	0.009810	ppm	0.000871	8.9	7.6246	0.049049 ppm	Y 361.104	1.0000
Zr	257.147	0.006236	ppm	0.000310	5.0	70.187	0.031179 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(int)	%RSD
Y	361.104	0.91377	174293	298.516	0.2

A623697 1:5 (Samp) **3/29/03, 11:13:12 AM** **Rack 2, Tube 92**
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	0.41505	-28.022	-22.634
Al	237.312	7.9110	3.6919	2.5040
As	188.980	-3.4404	-1.1086	-4.0040
B	249.772	773.33	743.57	723.32

El	Wavelen.	Replicates Intensity (c/s)		
Ba	233.527	932.86	944.64	938.59
Be	234.861	-3.7555	-6.9407	-1.7895
Ca	315.887	420640	423659	422244
Cd	228.802	-0.11500	0.79890	-1.8142
Co	231.160	7.9963	9.4014	9.3925
Cr	267.716	12.036	18.912	5.9497
Cu	324.754	264.94	270.21	274.84
Fe	261.382	15.069	13.239	13.782
K	728.181	630.39	632.44	620.24
Li	610.365	-466.85	-467.60	-476.80
Mg	279.078	53883	54299	54127
Mn	293.305	15.823	1.1848	5.3142
Mo	202.032	7.3638	8.2499	7.1891
Na	589.592	27631658	27790044	27554420
Na	568.821	88014	88232	87994
Ni	221.648	40.064	40.178	37.651
Pb	220.353	-1.8927	-0.13540	-3.4442
Sb	217.582	-3.2411	-5.1234	-4.8192
Se	196.026	8.4676	4.8762	3.6575
Si	251.611	25211	25439	25372
Sn	189.927	-0.44127	1.2320	-0.23727
Sr	216.596	488.26	497.86	492.96
Ti	322.284	92.172	108.21	100.06
Tl	190.794	0.10364	0.12811	-0.26628
V	289.164	7.2732	8.0373	12.592
Y	361.104	178524	178127	179340
Zn	206.200	3.1240	2.9539	2.5255
Zr	257.147	24.659	16.458	19.210

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000048u	ppm	0.000479	1002.8	-16.747	-0.000239 ppm	Y 361.104	1.0000
Al	237.312	0.009571	ppm	0.005862	61.2	4.7023	0.047855 ppm	Y 361.104	1.0000
As	188.980	-0.008078u	ppm	0.005721	70.8	-2.8510	-0.040390 ppm	Y 361.104	1.0000
B	249.772	0.069287	ppm	0.002365	3.4	746.74	0.34643 ppm	Y 361.104	1.0000
Ba	233.527	0.027574	ppm	0.000189	0.7	938.70	0.13787 ppm	Y 361.104	1.0000
Be	234.861	-0.000005u	ppm	0.000054	1054.9	-4.1619	-0.000025 ppm	Y 361.104	1.0000
Ca	315.887	82.415	ppm	0.29490	0.4	422181	412.08 ppm	Y 361.104	1.0000
Cd	228.802	-0.000100u	ppm	0.000193	193.8	-0.37676	-0.000499 ppm	Y 361.104	1.0000
Co	231.160	-0.000258u	ppm	0.000175	67.9	8.9301	-0.001289 ppm	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Cr	267.716	0.000296	ppm	0.000245	83.0	12.299	0.001478 ppm	Y 361.104	1.0000
Cu	324.754	0.004965	ppm	0.000154	3.1	270.00	0.024827 ppm	Y 361.104	1.0000
Fe	261.382	0.006011	ppm	0.000652	10.9	14.030	0.030054 ppm	Y 361.104	1.0000
K	728.181	0.37539	ppm	0.004476	1.2	627.69	1.8769 ppm	Y 361.104	1.0000
Li	610.365	-0.008136u	ppm	0.000136	1.7	-470.42	-0.040682 ppm	Y 361.104	1.0000
Mg	279.078	63.266	ppm	0.24434	0.4	54103	316.33 ppm	Y 361.104	1.0000
Mn	293.305	0.000039u	ppm	0.000648	1662.2	7.4406	0.000195 ppm	Y 361.104	1.0000
Mo	202.032	0.000064u	ppm	0.000164	254.3	7.6009	0.000322 ppm	Y 361.104	1.0000
Na	589.592	187.24o	ppm	0.78388	0.4	27658706	936.22 ppm	Y 361.104	1.0000
Na	568.821	319.70	ppm	0.47656	0.1	88080	1598.5 ppm	Y 361.104	1.0000
Ni	221.648	0.011416	ppm	0.001173	10.3	39.298	0.057079 ppm	Y 361.104	1.0000
Pb	220.353	0.000724u	ppm	0.001204	166.3	-1.8241	0.003620 ppm	Y 361.104	1.0000
Sb	217.582	-0.006805u	ppm	0.002033	29.9	-4.3946	-0.034026 ppm	Y 361.104	1.0000
Se	196.026	0.024442	ppm	0.011922	48.8	5.6671	0.12221 ppm	Y 361.104	1.0000
Si	251.611	13.452	ppm	0.062201	0.5	25340	67.259 ppm	Y 361.104	1.0000
Sn	189.927	0.000123u	ppm	0.001496	1218.5	0.18448	0.000614 ppm	Y 361.104	1.0000
Sr	216.596	0.11314	ppm	0.001100	1.0	493.03	0.56568 ppm	Y 361.104	1.0000
Ti	322.284	0.002405	ppm	0.001113	46.3	100.15	0.012027 ppm	Y 361.104	1.0000
Tl	190.794	0.002496	ppm	0.000608	24.3	-0.011512	0.012482 ppm	Y 361.104	1.0000
V	289.164	0.001485	ppm	0.000464	31.3	9.3007	0.007425 ppm	Y 361.104	1.0000
Zn	206.200	0.002465	ppm	0.000477	19.3	2.8678	0.012324 ppm	Y 361.104	1.0000
Zr	257.147	0.000649	ppm	0.000466	71.8	20.109	0.003244 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93668	178664	618.125	0.3

Sec-.030 RSD

A623858 1:5 (Samp) 3/29/03, 11:17:08 AM Rack 2, Tube 93
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-24.310	-34.057	-33.096	
Al	237.312	21.555	23.554	21.103	
As	188.980	-1.9171	-0.93488	-1.7051	
B	249.772	1724.5	1730.3	1721.3	
Ba	233.527	2405.6	2422.5	2426.5	
Be	234.861	-3.8881	-2.3981	-1.6671	
Ca	315.887	2359233	2370383	2377391	
Cd	228.802	-2.3030	0.58838	3.4328	
Co	231.160	5.4212	6.1212	11.610	
Cr	267.716	12.285	10.895	13.733	

El	Wavelen.	Replicates Intensity (c/s)			
Cu	324.754	312.01	314.09	299.52	
Fe	261.382	31.026	30.962	29.245	
K	728.181	32043	32192	32218	
Li	610.365	-5699.0	-5728.6	-5713.4	
Mg	279.078	81.105	79.964	79.434	
Mn	293.305	23.835	7.2893	13.742	
Mo	202.032	55.640	57.781	56.404	
Na	589.592	9206335	9261435	9265958	
Na	568.821	16753	16728	16769	
Ni	221.648	0.31083	2.1969	0.44546	
Pb	220.353	-3.1691	-3.3135	3.9864	
Sb	217.582	-0.11097	-0.92155	0.74446	
Se	196.026	1879.0	1897.3	1899.3	
Si	251.611	1401.1	1398.8	1393.3	
Sn	189.927	1.4764	1.0981	1.7218	
Sr	216.596	1950.2	1961.2	1962.8	
Ti	322.284	81.905	79.082	83.023	
Tl	190.794	-1.1028	-2.2034	-1.4548	
V	289.164	6.9110	10.968	8.2961	
Y	361.104	179414	178533	179080	
Zn	206.200	4.8203	0.16854	3.1019	
Zr	257.147	32.347	28.175	29.362	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000486u	ppm	0.000170	35.0	-30.488	-0.002432 ppm	Y 361.104	1.0000
Al	237.312	0.045236	ppm	0.002691	5.9	22.070	0.22618 ppm	Y 361.104	1.0000
As	188.980	-0.003122u	ppm	0.001926	61.7	-1.5190	-0.015608 ppm	Y 361.104	1.0000
B	249.772	0.16129	ppm	0.000433	0.3	1725.4	0.80644 ppm	Y 361.104	1.0000
Ba	233.527	0.075010	ppm	0.000354	0.5	2418.2	0.37505 ppm	Y 361.104	1.0000
Be	234.861	0.000028	ppm	0.000023	84.3	-2.6511	0.000139 ppm	Y 361.104	1.0000
Ca	315.887	462.59	ppm	1.7882	0.4	2369002	2313.0 ppm	Y 361.104	1.0000
Cd	228.802	0.000045u	ppm	0.000418	932.4	0.57271	0.000224 ppm	Y 361.104	1.0000
Co	231.160	-0.000888u	ppm	0.000734	82.7	7.7173	-0.004438 ppm	Y 361.104	1.0000
Cr	267.716	0.000296	ppm	0.000054	18.2	12.304	0.001479 ppm	Y 361.104	1.0000
Cu	324.754	0.006162	ppm	0.000245	4.0	308.54	0.030811 ppm	Y 361.104	1.0000
Fe	261.382	0.017383	ppm	0.000701	4.0	30.411	0.086914 ppm	Y 361.104	1.0000
K	728.181	21.761	ppm	0.063307	0.3	32151	108.80 ppm	Y 361.104	1.0000
Li	610.365	-0.028961u	ppm	0.000362	1.2	-5713.7	-0.14481 ppm	Y 361.104	1.0000
Mg	279.078	0.093052	ppm	0.000998	1.1	80.167	0.46526 ppm	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Mn	293.305	0.000684	ppm	0.000716	104.7	14.955	0.003420 ppm	Y 361.104	1.0000
Mo	202.032	0.014159	ppm	0.000312	2.2	56.608	0.070794 ppm	Y 361.104	1.0000
Na	589.592	66.309	ppm	0.22697	0.3	9244576	331.55 ppm	Y 361.104	1.0000
Na	568.821	59.983	ppm	0.073269	0.1	16750	299.91 ppm	Y 361.104	1.0000
Ni	221.648	0.000124	ppm	0.000865	695.1	0.98439	0.000622 ppm	Y 361.104	1.0000
Pb	220.353	0.001469u	ppm	0.003036	206.6	-0.83208	0.007346 ppm	Y 361.104	1.0000
Sb	217.582	0.001819	ppm	0.001677	92.2	-0.096021	0.009093 ppm	Y 361.104	1.0000
Se	196.026	9.0170	ppm	0.053266	0.6	1891.9	45.085 ppm	Y 361.104	1.0000
Si	251.611	0.72749	ppm	0.002148	0.3	1397.7	3.6374 ppm	Y 361.104	1.0000
Sn	189.927	0.002166	ppm	0.000515	23.8	1.4321	0.010828 ppm	Y 361.104	1.0000
Sr	216.596	0.44889	ppm	0.001571	0.3	1958.1	2.2445 ppm	Y 361.104	1.0000
Ti	322.284	-0.000220u	ppm	0.000282	127.9	81.337	-0.001102 ppm	Y 361.104	1.0000
Tl	190.794	-0.001805u	ppm	0.001545	85.6	-1.5870	-0.009026 ppm	Y 361.104	1.0000
V	289.164	0.001400	ppm	0.000333	23.8	8.7249	0.007002 ppm	Y 361.104	1.0000
Zn	206.200	0.002197u	ppm	0.003636	165.5	2.6969	0.010983 ppm	Y 361.104	1.0000
Zr	257.147	0.001745	ppm	0.000240	13.8	29.961	0.008726 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93849	179009	444.778	0.2

A623859 1:5 (Samp) **3/29/03, 11:21:04 AM** **Rack 2, Tube 94**
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-31.224	-16.132	-35.194
Al	237.312	19.178	18.985	17.344
As	188.980	-1.1995	-1.4669	-2.6190
B	249.772	1980.0	2018.9	2005.0
Ba	233.527	2688.0	2699.6	2709.2
Be	234.861	-3.3537	-5.4558	-1.3029
Ca	315.887	2351741	2368734	2376933
Cd	228.802	-3.0485	-1.0965	-0.027937
Co	231.160	11.120	8.3872	3.0110
Cr	267.716	7.0446	19.828	4.6642
Cu	324.754	267.77	274.81	264.49
Fe	261.382	27.969	32.120	30.187
K	728.181	32034	32128	32060
Li	610.365	-5525.7	-5586.5	-5568.3
Mg	279.078	62.667	64.018	62.209
Mn	293.305	17.322	17.006	20.330

El	Wavelen.	Replicates Intensity (c/s)		
Mo	202.032	61.079	60.897	61.197
Na	589.592	9795328	9823753	9831617
Na	568.821	17846	17822	17883
Ni	221.648	0.86311	0.21044	1.7745
Pb	220.353	-1.6347	0.83833	-2.5233
Sb	217.582	-0.94516	-0.19008	0.17409
Se	196.026	1164.3	1173.1	1185.3
Si	251.611	1218.6	1223.3	1225.0
Sn	189.927	1.9741	0.45916	1.7154
Sr	216.596	1999.8	2018.5	2019.7
Ti	322.284	74.651	82.183	75.336
Tl	190.794	-1.7584	-3.7066	-2.4746
V	289.164	11.798	10.591	7.8894
Y	361.104	178707	178599	178624
Zn	206.200	0.91734	3.3829	2.3821
Zr	257.147	34.461	33.247	26.192

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000393u	ppm	0.000319	81.2	-27.516	-0.001964 ppm	Y 361.104	1.0000
Al	237.312	0.037845	ppm	0.002079	5.5	18.503	0.18922 ppm	Y 361.104	1.0000
As	188.980	-0.004027u	ppm	0.002811	69.8	-1.7618	-0.020137 ppm	Y 361.104	1.0000
B	249.772	0.18723	ppm	0.001852	1.0	2001.3	0.93614 ppm	Y 361.104	1.0000
Ba	233.527	0.084012	ppm	0.000340	0.4	2699.0	0.42006 ppm	Y 361.104	1.0000
Be	234.861	0.000013u	ppm	0.000043	333.8	-3.3708	0.000064 ppm	Y 361.104	1.0000
Ca	315.887	461.97	ppm	2.5092	0.5	2365803	2309.8 ppm	Y 361.104	1.0000
Cd	228.802	-0.000242u	ppm	0.000223	92.2	-1.3910	-0.001212 ppm	Y 361.104	1.0000
Co	231.160	-0.000931u	ppm	0.000894	96.1	7.5059	-0.004653 ppm	Y 361.104	1.0000
Cr	267.716	0.000228	ppm	0.000309	135.4	10.512	0.001140 ppm	Y 361.104	1.0000
Cu	324.754	0.004933	ppm	0.000164	3.3	269.02	0.024664 ppm	Y 361.104	1.0000
Fe	261.382	0.017160	ppm	0.001442	8.4	30.092	0.085799 ppm	Y 361.104	1.0000
K	728.181	21.709	ppm	0.032659	0.2	32074	108.55 ppm	Y 361.104	1.0000
Li	610.365	-0.025382u	ppm	0.000763	3.0	-5560.2	-0.12691 ppm	Y 361.104	1.0000
Mg	279.078	0.072936	ppm	0.001100	1.5	62.965	0.36468 ppm	Y 361.104	1.0000
Mn	293.305	0.000964	ppm	0.000158	16.3	18.220	0.004821 ppm	Y 361.104	1.0000
Mo	202.032	0.015438	ppm	0.000044	0.3	61.057	0.077192 ppm	Y 361.104	1.0000
Na	589.592	70.211	ppm	0.12981	0.2	9816899	351.06 ppm	Y 361.104	1.0000
Na	568.821	63.956	ppm	0.11075	0.2	17851	319.78 ppm	Y 361.104	1.0000
Ni	221.648	0.000243	ppm	0.000646	265.3	0.94934	0.001217 ppm	Y 361.104	1.0000
Pb	220.353	0.001273	ppm	0.001267	99.5	-1.1066	0.006367 ppm	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Sb	217.582	0.001367	ppm	0.001149	84.0	-0.32038	0.006835 ppm	Y 361.104	1.0000
Se	196.026	5.5958	ppm	0.050283	0.9	1174.3	27.979 ppm	Y 361.104	1.0000
Si	251.611	0.63426	ppm	0.001758	0.3	1222.3	3.1713 ppm	Y 361.104	1.0000
Sn	189.927	0.002085	ppm	0.001328	63.7	1.3829	0.010425 ppm	Y 361.104	1.0000
Sr	216.596	0.46141	ppm	0.002552	0.6	2012.7	2.3070 ppm	Y 361.104	1.0000
Ti	322.284	-0.000769u	ppm	0.000578	75.1	77.390	-0.003847 ppm	Y 361.104	1.0000
Tl	190.794	-0.004716u	ppm	0.002709	57.4	-2.6465	-0.023580 ppm	Y 361.104	1.0000
V	289.164	0.001622	ppm	0.000323	19.9	10.093	0.008111 ppm	Y 361.104	1.0000
Zn	206.200	0.001470u	ppm	0.001917	130.4	2.2275	0.007352 ppm	Y 361.104	1.0000
Zr	257.147	0.001895	ppm	0.000499	26.3	31.300	0.009473 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.93657	178643	56.707	0.0

A623860 1:5 (Samp) **3/29/03, 11:25:00 AM** **Rack 2, Tube 95**
Weight: 1 **Volume: 1** **Dilution: 5**

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-35.982	-29.599	-24.237	
Al	237.312	14.935	15.043	19.936	
As	188.980	-3.0879	-0.61623	-1.3442	
B	249.772	1930.0	1934.9	1934.1	
Ba	233.527	2268.8	2281.7	2286.3	
Be	234.861	-4.8165	-4.0940	-5.5009	
Ca	315.887	2278352	2289984	2289048	
Cd	228.802	-1.1431	-0.71108	1.9915	
Co	231.160	8.4399	12.532	7.4069	
Cr	267.716	8.2373	15.505	6.5814	
Cu	324.754	308.93	316.41	318.34	
Fe	261.382	67.001	68.314	67.063	
K	728.181	31716	31857	31696	
Li	610.365	-5260.8	-5319.0	-5290.7	
Mg	279.078	82.644	86.782	83.739	
Mn	293.305	18.578	14.020	16.546	
Mo	202.032	61.548	62.333	65.178	
Na	589.592	10228771	10273476	10287546	
Na	568.821	18685	18728	18774	
Ni	221.648	2.4392	2.8684	2.3681	
Pb	220.353	1.2409	-0.32243	-6.0141	
Sb	217.582	1.6744	1.2922	-0.40207	

El	Wavelen.	Replicates Intensity (c/s)			
Se	196.026	1583.5	1592.6	1589.4	
Si	251.611	1549.5	1557.8	1558.5	
Sn	189.927	0.80876	1.7506	1.4152	
Sr	216.596	1898.5	1910.8	1914.7	
Ti	322.284	79.045	79.205	78.576	
Tl	190.794	-1.1363	-3.5985	-2.6451	
V	289.164	4.2810	10.571	14.063	
Y	361.104	179959	180092	180110	
Zn	206.200	4.9277	1.7440	4.6864	
Zr	257.147	28.277	31.655	29.286	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000469u	ppm	0.000187	39.7	-29.939	-0.002347 ppm	Y 361.104	1.0000
Al	237.312	0.034044	ppm	0.005893	17.3	16.638	0.17022 ppm	Y 361.104	1.0000
As	188.980	-0.003732u	ppm	0.004734	126.8	-1.6828	-0.018661 ppm	Y 361.104	1.0000
B	249.772	0.18081	ppm	0.000245	0.1	1933.0	0.90405 ppm	Y 361.104	1.0000
Ba	233.527	0.070545	ppm	0.000292	0.4	2278.9	0.35272 ppm	Y 361.104	1.0000
Be	234.861	-0.000013u	ppm	0.000015	111.5	-4.8038	-0.000065 ppm	Y 361.104	1.0000
Ca	315.887	446.34	ppm	1.2620	0.3	2285794	2231.7 ppm	Y 361.104	1.0000
Cd	228.802	-0.000033u	ppm	0.000248	758.4	0.045745	-0.000163 ppm	Y 361.104	1.0000
Co	231.160	-0.000505u	ppm	0.000587	116.3	9.4596	-0.002524 ppm	Y 361.104	1.0000
Cr	267.716	0.000213	ppm	0.000180	84.5	10.108	0.001063 ppm	Y 361.104	1.0000
Cu	324.754	0.006353	ppm	0.000155	2.4	314.56	0.031763 ppm	Y 361.104	1.0000
Fe	261.382	0.043094	ppm	0.000514	1.2	67.459	0.21547 ppm	Y 361.104	1.0000
K	728.181	21.496	ppm	0.058830	0.3	31756	107.48 ppm	Y 361.104	1.0000
Li	610.365	-0.023193u	ppm	0.000712	3.1	-5290.2	-0.11597 ppm	Y 361.104	1.0000
Mg	279.078	0.097988	ppm	0.002507	2.6	84.388	0.48994 ppm	Y 361.104	1.0000
Mn	293.305	0.000806	ppm	0.000196	24.3	16.381	0.004032 ppm	Y 361.104	1.0000
Mo	202.032	0.016003	ppm	0.000549	3.4	63.020	0.080013 ppm	Y 361.104	1.0000
Na	589.592	73.240	ppm	0.20780	0.3	10263264	366.20 ppm	Y 361.104	1.0000
Na	568.821	67.228	ppm	0.15994	0.2	18729	336.14 ppm	Y 361.104	1.0000
Ni	221.648	0.001286	ppm	0.000223	17.3	2.5585	0.006429 ppm	Y 361.104	1.0000
Pb	220.353	0.000845u	ppm	0.002777	328.7	-1.6985	0.004225 ppm	Y 361.104	1.0000
Sb	217.582	0.003735	ppm	0.002224	59.5	0.85483	0.018676 ppm	Y 361.104	1.0000
Se	196.026	7.5708	ppm	0.021958	0.3	1588.5	37.854 ppm	Y 361.104	1.0000
Si	251.611	0.81119	ppm	0.002671	0.3	1555.2	4.0560 ppm	Y 361.104	1.0000
Sn	189.927	0.001990	ppm	0.000782	39.3	1.3248	0.009950 ppm	Y 361.104	1.0000
Sr	216.596	0.43741	ppm	0.001945	0.4	1908.0	2.1871 ppm	Y 361.104	1.0000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Y 361.104	1.0000

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Tl	190.794	-0.004204u	ppm	0.003413	81.2	-2.4600	-0.021019 ppm	Y 361.104	1.0000
V	289.164	0.001548	ppm	0.000801	51.7	9.6381	0.007740 ppm	Y 361.104	1.0000
Zn	206.200	0.003881	ppm	0.002740	70.6	3.7860	0.019405 ppm	Y 361.104	1.0000
Zr	257.147	0.001718	ppm	0.000194	11.3	29.739	0.008589 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.94397	180054	82.811	0.0

A623862 1:5 (Samp) 3/29/03, 11:28:56 AM Rack 2, Tube 96
Weight: 1 Volume: 1 Dilution: 5

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-24.172	-24.688	-9.3672	
Al	237.312	18.650	17.449	17.529	
As	188.980	-1.0669	-0.11890	-1.3126	
B	249.772	2584.6	2582.1	2612.2	
Ba	233.527	2438.8	2451.9	2470.6	
Be	234.861	-6.8072	-5.5558	-0.69552	
Ca	315.887	2300734	2318444	2316092	
Cd	228.802	2.2930	-1.9646	0.31463	
Co	231.160	7.9504	13.492	0.26725	
Cr	267.716	18.717	13.594	10.591	
Cu	324.754	328.74	318.87	314.62	
Fe	261.382	34.111	32.221	31.649	
K	728.181	30599	30682	30612	
Li	610.365	-5494.2	-5551.5	-5505.5	
Mg	279.078	114.51	116.44	113.40	
Mn	293.305	19.568	22.380	11.554	
Mo	202.032	56.673	56.551	59.410	
Na	589.592	9427606	9484140	9472621	
Na	568.821	17117	17160	17218	
Ni	221.648	3.1810	-0.043394	3.4501	
Pb	220.353	0.080036	0.89589	-5.3302	
Sb	217.582	0.80897	2.0209	-3.2535	
Se	196.026	1581.3	1604.7	1607.8	
Si	251.611	1343.1	1353.5	1349.7	
Sn	189.927	1.0048	0.63865	2.2143	
Sr	216.596	1857.2	1871.6	1866.7	
Ti	322.284	77.897	83.780	80.010	
Tl	190.794	-2.7852	0.40987	-3.9933	

El	Wavelen.	Replicates Intensity (c/s)			
V	289.164	6.5475	7.2191	11.164	
Y	361.104	179525	179081	180712	
Zn	206.200	5.5926	2.2851	5.2534	
Zr	257.147	33.034	25.690	22.305	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	-0.000135u	ppm	0.000276	204.1	-19.409	-0.000676 ppm	Y 361.104	1.0000
Al	237.312	0.036580	ppm	0.001385	3.8	17.876	0.18290 ppm	Y 361.104	1.0000
As	188.980	-0.000564u	ppm	0.002349	416.3	-0.83279	-0.002821 ppm	Y 361.104	1.0000
B	249.772	0.24285	ppm	0.001569	0.6	2593.0	1.2143 ppm	Y 361.104	1.0000
Ba	233.527	0.076151	ppm	0.000512	0.7	2453.8	0.38076 ppm	Y 361.104	1.0000
Be	234.861	-0.000007u	ppm	0.000067	928.8	-4.3529	-0.000036 ppm	Y 361.104	1.0000
Ca	315.887	451.41	ppm	1.8783	0.4	2311757	2257.1 ppm	Y 361.104	1.0000
Cd	228.802	-0.000005u	ppm	0.000311	6235.3	0.21434	-0.000025 ppm	Y 361.104	1.0000
Co	231.160	-0.000980u	ppm	0.001439	146.9	7.2366	-0.004899 ppm	Y 361.104	1.0000
Cr	267.716	0.000371	ppm	0.000156	41.9	14.300	0.001857 ppm	Y 361.104	1.0000
Cu	324.754	0.006542	ppm	0.000225	3.4	320.74	0.032709 ppm	Y 361.104	1.0000
Fe	261.382	0.018942	ppm	0.000894	4.7	32.660	0.094708 ppm	Y 361.104	1.0000
K	728.181	20.739	ppm	0.029988	0.1	30631	103.70 ppm	Y 361.104	1.0000
Li	610.365	-0.027311u	ppm	0.000743	2.7	-5517.1	-0.13656 ppm	Y 361.104	1.0000
Mg	279.078	0.13353	ppm	0.001798	1.3	114.78	0.66764 ppm	Y 361.104	1.0000
Mn	293.305	0.000931	ppm	0.000482	51.8	17.834	0.004656 ppm	Y 361.104	1.0000
Mo	202.032	0.014428	ppm	0.000465	3.2	57.545	0.072140 ppm	Y 361.104	1.0000
Na	589.592	67.790	ppm	0.20385	0.3	9461456	338.95 ppm	Y 361.104	1.0000
Na	568.821	61.555	ppm	0.18117	0.3	17165	307.77 ppm	Y 361.104	1.0000
Ni	221.648	0.001162	ppm	0.001598	137.6	2.1959	0.005810 ppm	Y 361.104	1.0000
Pb	220.353	0.001021u	ppm	0.002461	241.1	-1.4514	0.005105 ppm	Y 361.104	1.0000
Sb	217.582	0.001729u	ppm	0.005560	321.7	-0.14123	0.008643 ppm	Y 361.104	1.0000
Se	196.026	7.6155	ppm	0.069073	0.9	1597.9	38.078 ppm	Y 361.104	1.0000
Si	251.611	0.70146	ppm	0.002803	0.4	1348.8	3.5073 ppm	Y 361.104	1.0000
Sn	189.927	0.001926	ppm	0.001351	70.1	1.2859	0.009631 ppm	Y 361.104	1.0000
Sr	216.596	0.42760	ppm	0.001676	0.4	1865.2	2.1380 ppm	Y 361.104	1.0000
Ti	322.284	-0.000328u	ppm	0.000414	126.0	80.562	-0.001641 ppm	Y 361.104	1.0000
Tl	190.794	-0.003278u	ppm	0.006255	190.8	-2.1229	-0.016391 ppm	Y 361.104	1.0000
V	289.164	0.001334	ppm	0.000403	30.2	8.3101	0.006670 ppm	Y 361.104	1.0000
Zn	206.200	0.004794	ppm	0.002813	58.7	4.3770	0.023969 ppm	Y 361.104	1.0000
Zr	257.147	0.001415	ppm	0.000612	43.3	27.010	0.007077 ppm	Y 361.104	1.0000

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.94249	179772	843.075	0.5

CCV (CCV) 3/29/03, 11:32:51 AM Rack 2, Tube 97

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	31797	31862	31844
Al	237.312	2401.4	2414.7	2427.8
As	188.980	1351.3	1356.2	1359.2
B	249.772	20478	20569	20639
Ba	233.527	153070	153851	153974
Be	234.861	242165	243546	242775
Ca	315.887	256478	257980	257702
Cd	228.802	34471	34604	34625
Co	231.160	22645	22763	22780
Cr	267.716	132117	132843	133071
Cu	324.754	160738	161474	162947
Fe	261.382	7081.9	7137.7	7140.0
K	728.181	68925	69010	68942
Li	610.365	201868	202584	202274
Mg	279.078	41928	42121	42102
Mn	293.305	57838	58169	58151
Mo	202.032	3425.6	3473.7	3511.7
Na	589.592	7250274	7274562	7273051
Na	568.821	12486	12488	12555
Ni	221.648	6028.4	6046.6	6058.2
Pb	220.353	6794.7	6804.0	6820.0
Sb	217.582	494.56	498.02	499.07
Se	196.026	1033.8	1043.4	1047.7
Si	251.611	9443.9	9467.5	9498.4
Sn	189.927	3016.1	3041.5	3033.4
Sr	216.596	21643	21881	21928
Ti	322.284	35691	35840	35885
Tl	190.794	1716.2	1751.7	1758.6
V	289.164	31068	31245	31288
Y	361.104	184876	184572	186057
Zn	206.200	3151.7	3186.2	3196.8
Zr	257.147	45127	45347	45421

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.99802	ppm	0.001062	0.1	31835	0.99802 ppm	Y 361.104	99.80238
Al	237.312	4.9461	ppm	0.027241	0.6	2414.6	4.9461 ppm	Y 361.104	98.92241
As	188.980	5.0533	ppm	0.014864	0.3	1355.6	5.0533 ppm	Y 361.104	101.06612
B	249.772	1.9345	ppm	0.007595	0.4	20562	1.9345 ppm	Y 361.104	96.72585
Ba	233.527	4.9227	ppm	0.015711	0.3	153632	4.9227 ppm	Y 361.104	98.45333
Be	234.861	5.0177	ppm	0.014297	0.3	242829	5.0177 ppm	Y 361.104	100.35337
Ca	315.887	50.250	ppm	0.15606	0.3	257387	50.250 ppm	Y 361.104	100.49920
Cd	228.802	5.0449	ppm	0.012192	0.2	34567	5.0449 ppm	Y 361.104	100.89709
Co	231.160	4.9267	ppm	0.015880	0.3	22730	4.9267 ppm	Y 361.104	98.53300
Cr	267.716	5.0214	ppm	0.018861	0.4	132677	5.0214 ppm	Y 361.104	100.42755
Cu	324.754	5.0291	ppm	0.034972	0.7	161720	5.0291 ppm	Y 361.104	100.58249
Fe	261.382	4.9662	ppm	0.022869	0.5	7119.9	4.9662 ppm	Y 361.104	99.32320
K	728.181	46.198	ppm	0.029670	0.1	68959	46.198 ppm	Y 361.104	92.39507
Li	610.365	4.9417	ppm	0.008782	0.2	202242	4.9417 ppm	Y 361.104	98.83399
Mg	279.078	49.171	ppm	0.12453	0.3	42050	49.171 ppm	Y 361.104	98.34295
Mn	293.305	4.9826	ppm	0.015972	0.3	58053	4.9826 ppm	Y 361.104	99.65208
Mo	202.032	0.99594	ppm	0.012409	1.2	3470.3	0.99594 ppm	Y 361.104	99.59406
Na	589.592	52.625	ppm	0.094875	0.2	7265962	52.625 ppm	Y 361.104	105.25069
Ni	221.648	4.9651	ppm	0.012358	0.2	6044.4	4.9651 ppm	Y 361.104	99.30247
Pb	220.353	4.9548	ppm	0.009327	0.2	6806.2	4.9548 ppm	Y 361.104	99.09504
Sb	217.582	1.0094	ppm	0.004747	0.5	497.21	1.0094 ppm	Y 361.104	100.93761
Se	196.026	4.9635	ppm	0.033820	0.7	1041.6	4.9635 ppm	Y 361.104	99.27090
Si	251.611	5.0174	ppm	0.014503	0.3	9469.9	5.0174 ppm	Y 361.104	100.34888
Sn	189.927	4.9623	ppm	0.021189	0.4	3030.3	4.9623 ppm	Y 361.104	99.24641
Sr	216.596	4.9988	ppm	0.035019	0.7	21817	4.9988 ppm	Y 361.104	99.97646
Ti	322.284	4.9559	ppm	0.014109	0.3	35805	4.9559 ppm	Y 361.104	99.11882
Tl	190.794	4.7628	ppm	0.062580	1.3	1742.1	4.7628 ppm	Y 361.104	95.25539
V	289.164	5.0546	ppm	0.018853	0.4	31200	5.0546 ppm	Y 361.104	101.09286
Zn	206.200	4.9018	ppm	0.036500	0.7	3178.2	4.9018 ppm	Y 361.104	98.03619
Zr	257.147	5.0582	ppm	0.017054	0.3	45298	5.0582 ppm	Y 361.104	101.16479

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.97078	185168	784.743	0.4

BLA01 (CCB) 3/29/03, 11:36:46 AM Rack 2, Tube 98

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-17.459	-21.948	-10.694
Al	237.312	-1.3486	-3.7947	-1.7193
As	188.980	1.5094	2.2444	1.0180

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El	Wavelen.	Replicates Intensity (c/s)		
B	249.772	247.02	234.36	214.91
Ba	233.527	79.113	79.254	79.268
Be	234.861	-4.0090	-2.0870	-0.40153
Ca	315.887	145.29	149.69	145.25
Cd	228.802	1.0092	-0.83093	0.16400
Co	231.160	9.2268	13.118	3.4857
Cr	267.716	24.598	16.221	17.455
Cu	324.754	102.79	109.11	97.783
Fe	261.382	6.0284	6.5663	10.511
K	728.181	104.54	113.11	99.550
Li	610.365	792.74	794.26	752.59
Mg	279.078	-0.26405	0.98048	2.0513
Mn	293.305	1.8534	6.4335	16.517
Mo	202.032	30.256	28.408	24.028
Na	589.592	1341.1	1275.5	1281.3
Na	568.821	-499.81	-506.09	-483.46
Ni	221.648	-1.7902	-2.6742	-0.21784
Pb	220.353	-1.6977	1.3514	-2.6939
Sb	217.582	-0.86904	-3.2000	-2.2511
Se	196.026	3.3735	4.1560	4.3668
Si	251.611	37.679	35.129	35.288
Sn	189.927	1.6518	1.5943	0.31441
Sr	216.596	0.91499	1.1748	-1.3780
Ti	322.284	88.142	73.914	78.300
Tl	190.794	7.6621	6.6323	6.0556
V	289.164	3.4049	6.4588	-1.9603
Y	361.104	190385	190971	191356
Zn	206.200	0.79639	2.6908	1.7999
Zr	257.147	16.912	18.790	21.221

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000046u	ppm	0.000180	388.0	-16.700	-0.000046 ppm	Y 361.104	-0.00005
Al	237.312	-0.004755u	ppm	0.002720	57.2	-2.2875	-0.004755 ppm	Y 361.104	-0.00476
As	188.980	0.008475	ppm	0.002300	27.1	1.5906	0.008475 ppm	Y 361.104	0.00847
B	249.772	0.020904	ppm	0.001521	7.3	232.10	0.020904 ppm	Y 361.104	0.02090
Ba	233.527	0.000017	ppm	0.000003	16.7	79.212	0.000017 ppm	Y 361.104	0.00002
Be	234.861	0.000036u	ppm	0.000037	105.0	-2.1658	0.000036 ppm	Y 361.104	0.00004
Ca	315.887	0.000005u	ppm	0.000498	10470.7	146.74	0.000005 ppm	Y 361.104	0.00000
Cd	228.802	-0.000011u	ppm	0.000134	1242.2	0.11408	-0.000011 ppm	Y 361.104	-0.00001

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Co	231.160	-0.000177u	ppm	0.001050	592.2	8.6101	-0.000177 ppm	Y 361.104	-0.00018
Cr	267.716	0.000565	ppm	0.000171	30.3	19.425	0.000565 ppm	Y 361.104	0.00057
Cu	324.754	-0.000223u	ppm	0.000177	79.1	103.23	-0.000223 ppm	Y 361.104	-0.00022
Fe	261.382	0.001618	ppm	0.001699	105.0	7.7019	0.001618 ppm	Y 361.104	0.00162
K	728.181	0.017686	ppm	0.004701	26.6	105.73	0.017686 ppm	Y 361.104	0.01769
Li	610.365	-0.000842u	ppm	0.000578	68.6	779.86	-0.000842 ppm	Y 361.104	-0.00084
Mg	279.078	0.000387u	ppm	0.001355	350.5	0.92256	0.000387 ppm	Y 361.104	0.00039
Mn	293.305	0.000110u	ppm	0.000644	585.4	8.2680	0.000110 ppm	Y 361.104	0.00011
Mo	202.032	0.005806	ppm	0.000920	15.8	27.564	0.005806 ppm	Y 361.104	0.00581
Na	589.592	0.000569	ppm	0.000274	48.2	1299.3	0.000569 ppm	Y 361.104	0.00057
Ni	221.648	-0.000820u	ppm	0.001023	124.8	-1.5608	-0.000820 ppm	Y 361.104	-0.00082
Pb	220.353	0.001329	ppm	0.001533	115.4	-1.0134	0.001329 ppm	Y 361.104	0.00133
Sb	217.582	-0.002231u	ppm	0.002359	105.7	-2.1067	-0.002231 ppm	Y 361.104	-0.00223
Se	196.026	0.016330	ppm	0.002495	15.3	3.9654	0.016330 ppm	Y 361.104	0.01633Z
Si	251.611	0.003810	ppm	0.000759	19.9	36.032	0.003810 ppm	Y 361.104	0.00381
Sn	189.927	0.001764	ppm	0.001239	70.2	1.1868	0.001764 ppm	Y 361.104	0.00176
Sr	216.596	0.000201u	ppm	0.000322	160.0	0.23727	0.000201 ppm	Y 361.104	0.00020
Ti	322.284	-0.000380u	ppm	0.001011	265.9	80.119	-0.000380 ppm	Y 361.104	-0.00038
Tl	190.794	0.021192	ppm	0.002238	10.6	6.7833	0.021192 ppm	Y 361.104	0.02119Z
V	289.164	0.000412u	ppm	0.000688	166.9	2.6344	0.000412 ppm	Y 361.104	0.00041
Zn	206.200	0.000754u	ppm	0.001465	194.4	1.7624	0.000754 ppm	Y 361.104	0.00075
Zr	257.147	0.000520	ppm	0.000241	46.4	18.974	0.000520 ppm	Y 361.104	0.00052

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0009	190904	488.994	0.3

DLS (CRI) **3/29/03, 11:40:41 AM** **Rack 2, Tube 99**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	300.53	310.93	323.79
Al	237.312	22.481	22.521	25.594
As	188.980	13.291	13.039	12.227
B	249.772	641.55	636.00	625.55
Ba	233.527	403.22	402.35	402.29
Be	234.861	194.20	197.84	196.72
Ca	315.887	767.96	765.53	763.14
Cd	228.802	36.392	34.611	36.909
Co	231.160	56.373	59.331	59.103
Cr	267.716	295.32	304.91	290.76
Cu	324.754	789.36	799.88	791.85

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El	Wavelen.	Replicates Intensity (c/s)		
Fe	261.382	47.068	48.299	45.086
K	728.181	225.24	231.03	234.00
Li	610.365	1183.9	1187.7	1176.4
Mg	279.078	93.467	94.020	95.281
Mn	293.305	136.22	133.55	129.45
Mo	202.032	42.404	41.993	40.670
Na	589.592	16620	16521	16571
Na	568.821	-455.92	-455.47	-450.78
Ni	221.648	13.891	11.981	12.624
Pb	220.353	11.138	14.010	13.130
Sb	217.582	0.21559	3.3941	2.3159
Se	196.026	3.3390	2.5829	3.1043
Si	251.611	480.91	483.47	481.99
Sn	189.927	31.208	31.310	32.945
Sr	216.596	48.463	43.996	48.995
Ti	322.284	155.61	158.97	158.29
Tl	190.794	4.8389	6.2110	5.8996
V	289.164	70.810	65.133	69.015
Y	361.104	191076	190674	192154
Zn	206.200	13.674	16.949	16.178
Zr	257.147	312.32	281.61	241.83

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.010301	ppm	0.000370	3.6	311.75	0.010301 ppm	Y 361.104	103.01161
Al	237.312	0.048354	ppm	0.003684	7.6	23.532	0.048354 ppm	Y 361.104	96.70836
As	188.980	0.050441	ppm	0.002073	4.1	12.852	0.050441 ppm	Y 361.104	100.88246
B	249.772	0.058731	ppm	0.000764	1.3	634.37	0.058731 ppm	Y 361.104	117.46141
Ba	233.527	0.010385	ppm	0.000017	0.2	402.62	0.010385 ppm	Y 361.104	103.84543
Be	234.861	0.004139	ppm	0.000038	0.9	196.26	0.004139 ppm	Y 361.104	-
Ca	315.887	0.12097	ppm	0.000470	0.4	765.54	0.12097 ppm	Y 361.104	120.97371
Cd	228.802	0.005257	ppm	0.000176	3.3	35.971	0.005257 ppm	Y 361.104	-
Co	231.160	0.010542	ppm	0.000357	3.4	58.269	0.010542 ppm	Y 361.104	105.42403
Cr	267.716	0.011071	ppm	0.000273	2.5	297.00	0.011071 ppm	Y 361.104	110.70795
Cu	324.754	0.021259	ppm	0.000171	0.8	793.70	0.021259 ppm	Y 361.104	106.29595
Fe	261.382	0.028826	ppm	0.001125	3.9	46.818	0.028826 ppm	Y 361.104	115.30396
K	728.181	0.10289	ppm	0.003054	3.0	230.09	0.10289 ppm	Y 361.104	102.88871
Li	610.365	0.009047	ppm	0.000140	1.6	1182.7	0.009047 ppm	Y 361.104	90.46502
Mg	279.078	0.10953	ppm	0.001087	1.0	94.256	0.10953 ppm	Y 361.104	109.52657
Mn	293.305	0.010823	ppm	0.000293	2.7	133.07	0.010823 ppm	Y 361.104	108.23085

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Mo	202.032	0.009868	ppm	0.000261	2.6	41.689	0.009868 ppm	Y 361.104	98.68012
Na	589.592	0.11573	ppm	0.000373	0.3	16570	0.11573 ppm	Y 361.104	115.73228
Ni	221.648	0.010645	ppm	0.000799	7.5	12.832	0.010645 ppm	Y 361.104	106.45455
Pb	220.353	0.011348	ppm	0.001070	9.4	12.760	0.011348 ppm	Y 361.104	113.48406
Sb	217.582	0.006000	ppm	0.003253	54.2	1.9752	0.006000 ppm	Y 361.104	60.00394
Se	196.026	0.011770	ppm	0.001845	15.7	3.0087	0.011770 ppm	Y 361.104	117.69666
Si	251.611	0.24088	ppm	0.000683	0.3	482.12	0.24088 ppm	Y 361.104	120.44189
Sn	189.927	0.051942	ppm	0.001597	3.1	31.821	0.051942 ppm	Y 361.104	103.88346
Sr	216.596	0.010947	ppm	0.000629	5.7	47.151	0.010947 ppm	Y 361.104	109.47135
Ti	322.284	0.010367	ppm	0.000247	2.4	157.63	0.010367 ppm	Y 361.104	103.66984
Tl	190.794	0.018018	ppm	0.001978	11.0	5.6498	0.018018 ppm	Y 361.104	180.18147R
V	289.164	0.011034	ppm	0.000469	4.2	68.319	0.011034 ppm	Y 361.104	110.33605
Zn	206.200	0.022126	ppm	0.002647	12.0	15.600	0.022126 ppm	Y 361.104	110.63219
Zr	257.147	0.029499	ppm	0.003946	13.4	278.59	0.029499 ppm	Y 361.104	294.99057R

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0029	191301	765.428	0.4

CDL01 (CRI) **3/29/03, 11:44:37 AM** **Rack 2, Tube 100**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	627.47	619.01	629.05
Al	237.312	42.179	39.155	41.814
As	188.980	5.3525	4.1609	4.5410
B	249.772	74.948	75.131	74.012
Ba	233.527	77.857	79.888	84.663
Be	234.861	496.50	490.26	497.16
Ca	315.887	231.09	221.97	226.83
Cd	228.802	72.323	70.959	71.000
Co	231.160	492.04	497.62	493.60
Cr	267.716	571.80	579.55	576.96
Cu	324.754	1780.5	1775.0	1787.3
Fe	261.382	12.848	12.418	10.301
K	728.181	121.29	110.79	119.80
Li	610.365	780.79	794.63	811.96
Mg	279.078	9.4383	10.126	9.7912
Mn	293.305	371.89	371.56	372.95
Mo	202.032	4.4491	1.2430	4.4862
Na	589.592	4856.1	4799.2	4794.4
Na	568.821	-493.17	-482.22	-495.73

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El	Wavelen.	Replicates Intensity (c/s)		
Ni	221.648	98.722	102.00	99.298
Pb	220.353	139.31	138.18	139.09
Sb	217.582	53.187	58.672	58.160
Se	196.026	4.5941	3.9789	1.3993
Si	251.611	38.434	36.671	36.789
Sn	189.927	0.48225	-0.014208	0.21765
Sr	216.596	1.5864	0.96423	-0.37753
Ti	322.284	72.778	79.534	84.168
Tl	190.794	7.0047	7.0615	9.3172
V	289.164	645.70	647.43	648.31
Y	361.104	191514	192337	191962
Zn	206.200	29.334	28.738	26.719
Zr	257.147	11.273	10.710	11.967

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.020315	ppm	0.000171	0.8	625.18	0.020315 ppm	Y 361.104	101.57715
Al	237.312	0.084580	ppm	0.003405	4.0	41.050	0.084580 ppm	Y 361.104	-
As	188.980	0.020004	ppm	0.002268	11.3	4.6848	0.020004 ppm	Y 361.104	100.02164
B	249.772	0.006108	ppm	0.000056	0.9	74.697	0.006108 ppm	Y 361.104	-
Ba	233.527	0.000055u	ppm	0.000112	204.8	80.802	0.000055 ppm	Y 361.104	-
Be	234.861	0.010301	ppm	0.000079	0.8	494.64	0.010301 ppm	Y 361.104	103.00593
Ca	315.887	0.015180	ppm	0.000890	5.9	226.63	0.015180 ppm	Y 361.104	-
Cd	228.802	0.010387	ppm	0.000113	1.1	71.427	0.010387 ppm	Y 361.104	103.86973
Co	231.160	0.10445	ppm	0.000623	0.6	494.42	0.10445 ppm	Y 361.104	104.45024
Cr	267.716	0.021634	ppm	0.000149	0.7	576.10	0.021634 ppm	Y 361.104	108.17237
Cu	324.754	0.052002	ppm	0.000192	0.4	1780.9	0.052002 ppm	Y 361.104	104.00460
Fe	261.382	0.004952	ppm	0.000946	19.1	11.856	0.004952 ppm	Y 361.104	-
K	728.181	0.025611	ppm	0.003893	15.2	117.30	0.025611 ppm	Y 361.104	-
Li	610.365	-0.000448u	ppm	0.000382	85.3	795.80	-0.000448 ppm	Y 361.104	-
Mg	279.078	0.010764	ppm	0.000402	3.7	9.7852	0.010764 ppm	Y 361.104	-
Mn	293.305	0.031344	ppm	0.000062	0.2	372.13	0.031344 ppm	Y 361.104	104.47964
Mo	202.032	-0.001146u	ppm	0.000535	46.7	3.3928	-0.001146 ppm	Y 361.104	-
Na	589.592	0.027107	ppm	0.000259	1.0	4816.6	0.027107 ppm	Y 361.104	-
Ni	221.648	0.082712	ppm	0.001438	1.7	100.01	0.082712 ppm	Y 361.104	103.38980
Pb	220.353	0.10306	ppm	0.000434	0.4	138.86	0.10306 ppm	Y 361.104	103.05751
Sb	217.582	0.11618	ppm	0.006098	5.2	56.673	0.11618 ppm	Y 361.104	96.81464
Se	196.026	0.013272	ppm	0.008081	60.9	3.3241	0.013272 ppm	Y 361.104	132.72050
Si	251.611	0.004482	ppm	0.000524	11.7	37.298	0.004482 ppm	Y 361.104	-
Sn	189.927	0.000203u	ppm	0.000407	200.7	0.22857	0.000203 ppm	Y 361.104	-

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Sr	216.596	0.000302	ppm	0.000230	76.2	0.72438	0.000302 ppm	Y 361.104	-
Ti	322.284	-0.000548u	ppm	0.000795	145.1	78.827	-0.000548 ppm	Y 361.104	-
Tl	190.794	0.023502	ppm	0.003627	15.4	7.7945	0.023502 ppm	Y 361.104	117.50890
V	289.164	0.10460	ppm	0.000215	0.2	647.15	0.10460 ppm	Y 361.104	104.60146
Zn	206.200	0.041683	ppm	0.002119	5.1	28.264	0.041683 ppm	Y 361.104	104.20840
Zr	257.147	-0.000336u	ppm	0.000070	20.9	11.317	-0.000336 ppm	Y 361.104	-

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%SD
Y	361.104	1.0063	191938	412.250	0.2

ICS-A (ICSA) 3/29/03, 11:48:32 AM Rack 3, Tube 1

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	-33.989	-37.697	-36.225
Al	237.312	263001	264977	265704
As	188.980	0.82258	-0.21195	-2.6208
B	249.772	-1058.4	-1033.4	-1041.4
Ba	233.527	231.16	227.65	233.14
Be	234.861	-1759.5	-1845.8	-1761.3
Ca	315.887	2599386	2607499	2609510
Cd	228.802	13.451	13.630	13.797
Co	231.160	94.080	93.400	94.146
Cr	267.716	102.71	97.579	105.05
Cu	324.754	-591.03	-587.59	-610.67
Fe	261.382	285821	286827	286951
K	728.181	244.19	232.80	229.89
Li	610.365	-9393.7	-9289.8	-9352.9
Mg	279.078	457502	459073	459062
Mn	293.305	103.61	104.05	106.13
Mo	202.032	2.1935	-5.2278	-6.9138
Na	589.592	20395	20366	20440
Na	568.821	743.74	738.86	775.20
Ni	221.648	2.5563	3.8918	8.1618
Pb	220.353	159.50	162.62	169.41
Sb	217.582	-21.972	-17.741	-19.172
Se	196.026	5.6171	11.757	0.82853
Si	251.611	147.01	135.74	135.39
Sn	189.927	2.3996	0.53643	3.2871
Sr	216.596	161.97	162.63	155.31
Ti	322.284	99.083	102.72	94.956

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El	Wavelen.	Replicates Intensity (c/s)		
Tl	190.794	-16.265	-11.430	-12.412
V	289.164	62.763	59.022	60.304
Y	361.104	167406	167717	168370
Zn	206.200	8.4262	7.7769	12.054
Zr	257.147	69.769	81.862	80.991

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	-0.000712u	ppm	0.000059	8.3	-35.970	-0.000712 ppm	Y 361.104	-0.00071
Al	237.312	545.77	ppm	2.8850	0.5	264561	545.77 ppm	Y 361.104	-
As	188.980	0.000052u	ppm	0.006585	12749.5	-0.67007	0.000052 ppm	Y 361.104	0.00005
B	249.772	-0.034647u	ppm	0.001200	3.5	-1044.4	-0.034647 ppm	Y 361.104	-0.03465
Ba	233.527	0.004871	ppm	0.000089	1.8	230.65	0.004871 ppm	Y 361.104	0.00487
Be	234.861	-0.008330u	ppm	0.001019	12.2	-1788.9	-0.008330 ppm	Y 361.104	-0.00833K
Ca	315.887	508.63	ppm	1.0466	0.2	2605465	508.63 ppm	Y 361.104	-
Cd	228.802	0.001950	ppm	0.000025	1.3	13.626	0.001950 ppm	Y 361.104	0.00195
Co	231.160	0.004294	ppm	0.000089	2.1	93.875	0.004294 ppm	Y 361.104	0.00429
Cr	267.716	0.003682	ppm	0.000145	3.9	101.78	0.003682 ppm	Y 361.104	0.00368
Cu	324.754	-0.001734u	ppm	0.000387	22.3	-596.43	-0.001734 ppm	Y 361.104	-0.00173
Fe	261.382	198.87	ppm	0.43014	0.2	286533	198.87 ppm	Y 361.104	-
K	728.181	0.10671	ppm	0.005179	4.9	235.63	0.10671 ppm	Y 361.104	0.10671
Li	610.365	-0.10476u	ppm	0.001280	1.2	-9345.5	-0.10476 ppm	Y 361.104	-0.10476K
Mg	279.078	536.21	ppm	1.0567	0.2	458545	536.21 ppm	Y 361.104	-
Mn	293.305	0.008379	ppm	0.000115	1.4	104.60	0.008379 ppm	Y 361.104	0.00838
Mo	202.032	-0.003075u	ppm	0.001394	45.3	-3.3160	-0.003075 ppm	Y 361.104	-0.00308
Na	589.592	0.14465	ppm	0.000282	0.2	20401	0.14465 ppm	Y 361.104	0.14465
Ni	221.648	0.004380	ppm	0.002407	55.0	4.8700	0.004380 ppm	Y 361.104	0.00438
Pb	220.353	0.022515	ppm	0.003687	16.4	163.84	0.022515 ppm	Y 361.104	0.02251K
Sb	217.582	-0.021743u	ppm	0.004331	19.9	-19.628	-0.021743 ppm	Y 361.104	-0.02174K
Se	196.026	0.018021	ppm	0.026116	144.9	6.0674	0.018021 ppm	Y 361.104	0.01802
Si	251.611	0.061951	ppm	0.003511	5.7	139.38	0.061951 ppm	Y 361.104	0.06195
Sn	189.927	0.003215	ppm	0.002300	71.5	2.0744	0.003215 ppm	Y 361.104	0.00321
Sr	216.596	0.010876	ppm	0.000928	8.5	159.97	0.010876 ppm	Y 361.104	0.01088
Ti	322.284	0.002235	ppm	0.000539	24.1	98.920	0.002235 ppm	Y 361.104	0.00223
Tl	190.794	0.004593u	ppm	0.007027	153.0	-13.369	0.004593 ppm	Y 361.104	0.00459
V	289.164	0.003275	ppm	0.000307	9.4	60.696	0.003275 ppm	Y 361.104	0.00328
Zn	206.200	0.022132	ppm	0.003563	16.1	9.4189	0.022132 ppm	Y 361.104	0.02213
Zr	257.147	-0.011402	ppm	0.000753	6.6	77.540	-0.011402 ppm	Y 361.104	-0.01140

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.87989	167831	492.395	0.3

ICS-AB (ICSAB) **3/29/03, 11:52:28 AM** **Rack 3, Tube 2**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	7026.0	7045.5	7046.3
Al	237.312	261837	263442	264003
As	188.980	22.890	24.796	21.512
B	249.772	1050.4	-1097.7	-1070.1
Ba	233.527	16265	16345	16348
Be	234.861	24218	24238	24231
Ca	315.887	2575985	2575303	2576103
Cd	228.802	7537.6	7639.5	7596.9
Co	231.160	2396.3	2392.6	2399.6
Cr	267.716	13703	13795	13788
Cu	324.754	17443	17500	17527
Fe	261.382	282768	283926	284230
K	728.181	144.75	142.51	145.25
Li	610.365	-9193.8	-9234.8	-9214.7
Mg	279.078	454451	456718	456867
Mn	293.305	5932.4	5944.3	5961.3
Mo	202.032	-9.9729	-3.1903	-6.3019
Na	589.592	11303	11235	11246
Na	568.821	731.38	712.91	728.70
Ni	221.648	1166.3	1172.4	1178.1
Pb	220.353	1494.1	1519.6	1501.9
Sb	217.582	299.86	295.90	293.73
Se	196.026	8.3542	19.603	10.251
Si	251.611	220.98	221.32	212.57
Sn	189.927	1.5919	5.1701	-0.85511
Sr	216.596	154.31	160.69	154.05
Ti	322.284	99.173	92.246	90.117
Tl	190.794	17.460	20.913	17.034
V	289.164	3283.8	3277.8	3266.7
Y	361.104	169716	169604	169486
Zn	206.200	625.20	623.29	623.63
Zr	257.147	79.918	78.465	80.711

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El	Wavelen.	Soln Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.22371	ppm	0.000365	0.2	7039.3	0.22371 ppm	Y 361.104	111.85498
Al	**237.312**	**542.75**	**ppm**	**2.3188**	0.4	263094	542.75 ppm	Y 361.104	108.54961
As	188.980	0.088382	ppm	0.006146	7.0	23.066	0.088382 ppm	Y 361.104	88.38245
B	249.772	-0.037882u	ppm	0.002233	5.9	-1072.7	-0.037882 ppm	Y 361.104	
Ba	233.527	0.52065	ppm	0.001516	0.3	16319	0.52065 ppm	Y 361.104	104.12975
Be	234.861	0.52891	ppm	0.000206	0.0	24229	0.52891 ppm	Y 361.104	105.78287
Ca	315.887	502.83	ppm	0.084335	0.0	2575797	502.83 ppm	Y 361.104	100.56688
Cd	228.802	1.1070	ppm	0.007456	0.7	7591.3	1.1070 ppm	Y 361.104	110.69735
Co	231.160	0.50085	ppm	0.000763	0.2	2396.2	0.50085 ppm	Y 361.104	100.16940
Cr	267.716	0.52070	ppm	0.001939	0.4	13762	0.52070 ppm	Y 361.104	104.13984
Cu	324.754	0.56083	ppm	0.001339	0.2	17490	0.56083 ppm	Y 361.104	112.16623
Fe	261.382	196.87	ppm	0.53556	0.3	283641	196.87 ppm	Y 361.104	98.43383
K	728.181	0.043835	ppm	0.001001	2.3	144.17	0.043835 ppm	Y 361.104	
Li	610.365	-0.10319u	ppm	0.000502	0.5	-9214.4	-0.10319 ppm	Y 361.104	
Mg	279.078	533.24	ppm	1.5830	0.3	456012	533.24 ppm	Y 361.104	106.64870
Mn	293.305	0.50980	ppm	0.001249	0.2	5946.0	0.50980 ppm	Y 361.104	101.96056
Mo	202.032	-0.003988u	ppm	0.000976	24.5	-6.4883	-0.003988 ppm	Y 361.104	
Na	589.592	0.073217	ppm	0.000275	0.4	11261	0.073217 ppm	Y 361.104	
Ni	221.648	0.96444	ppm	0.004884	0.5	1172.3	0.96444 ppm	Y 361.104	96.44412
Pb	220.353	0.99886	ppm	0.009525	1.0	1505.2	0.99886 ppm	Y 361.104	99.88605
Sb	217.582	0.61554	ppm	0.006251	1.0	296.50	0.61554 ppm	Y 361.104	102.58949
Se	196.026	0.049867	ppm	0.028711	57.6	12.736	0.049867 ppm	Y 361.104	99.73425
Si	251.611	0.10390	ppm	0.002634	2.5	218.29	0.10390 ppm	Y 361.104	
Sn	189.927	0.003156u	ppm	0.004964	157.3	1.9690	0.003156 ppm	Y 361.104	
Sr	216.596	0.010186	ppm	0.000861	8.5	156.35	0.010186 ppm	Y 361.104	
Ti	322.284	0.001596	ppm	0.000657	41.2	93.845	0.001596 ppm	Y 361.104	
Tl	190.794	0.089479	ppm	0.005848	6.5	18.469	0.089479 ppm	Y 361.104	89.47948
V	289.164	0.52466	ppm	0.001403	0.3	3276.1	0.52466 ppm	Y 361.104	104.93249
Zn	206.200	0.97122	ppm	0.001574	0.2	624.04	0.97122 ppm	Y 361.104	97.12187
Zr	257.147	-0.010997	ppm	0.000127	1.2	79.698	-0.010997 ppm	Y 361.104	

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.88917	169602	115.326	0.1

CCV (CCV) 3/29/03, 11:56:23 AM Rack 3, Tube 3

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	32185	32263	32239
Al	237.312	2450.4	2468.0	2467.0
As	188.980	1370.2	1376.2	1370.0

El	Wavelen.	Replicates Intensity (c/s)		
B	249.772	20639	20773	20826
Ba	233.527	155170	155805	155893
Be	234.861	244402	245195	245244
Ca	315.887	259838	261112	261035
Cd	228.802	34943	34997	35119
Co	231.160	22926	23105	23078
Cr	267.716	133925	134638	134710
Cu	324.754	162728	163223	164098
Fe	261.382	7207.8	7249.6	7249.2
K	728.181	69763	69907	69867
Li	610.365	204218	204919	204823
Mg	279.078	42432	42600	42629
Mn	293.305	58597	58877	58882
Mo	202.032	3461.0	3516.8	3555.7
Na	589.592	7345683	7372027	7388970
Na	568.821	12706	12666	12712
Ni	221.648	6094.0	6122.9	6114.2
Pb	220.353	6859.8	6895.6	6905.5
Sb	217.582	497.44	507.37	500.65
Se	196.026	1041.6	1055.0	1065.8
Si	251.611	9529.3	9556.7	9582.5
Sn	189.927	3057.3	3072.1	3054.1
Sr	216.596	22078	22168	22163
Ti	322.284	36146	36313	36081
Tl	190.794	1750.4	1777.9	1787.3
V	289.164	31512	31685	31692
Y	361.104	185301	185478	185856
Zn	206.200	3222.9	3253.9	3243.7
Zr	257.147	45682	45914	45905

El	Wavelen.	Soln Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	1.0104	ppm	0.001274	0.1	32229	1.0104 ppm	Y 361.104	101.04025
Al	237.312	5.0431	ppm	0.020421	0.4	2461.8	5.0431 ppm	Y 361.104	100.86121
As	188.980	5.1150	ppm	0.012965	0.3	1372.1	5.1150 ppm	Y 361.104	102.29959
B	249.772	1.9519	ppm	0.009045	0.5	20746	1.9519 ppm	Y 361.104	97.59400
Ba	233.527	4.9865	ppm	0.012639	0.3	155623	4.9865 ppm	Y 361.104	99.72998
Be	234.861	5.0614	ppm	0.009770	0.2	244947	5.0614 ppm	Y 361.104	101.22883
Ca	315.887	50.889	ppm	0.13945	0.3	260662	50.889 ppm	Y 361.104	101.77834
Cd	228.802	5.1110	ppm	0.013151	0.3	35020	5.1110 ppm	Y 361.104	102.21947

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El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Co	231.160	4.9932	ppm	0.020862	0.4	23036	4.9932 ppm	Y 361.104	99.86335
Cr	267.716	5.0875	ppm	0.016428	0.3	134424	5.0875 ppm	Y 361.104	101.75046
Cu	324.754	5.0799	ppm	0.021576	0.4	163350	5.0799 ppm	Y 361.104	101.59710
Fe	261.382	5.0467	ppm	0.016647	0.3	7235.5	5.0467 ppm	Y 361.104	100.93479
K	728.181	46.780	ppm	0.048883	0.1	69846	46.780 ppm	Y 361.104	93.55910
Li	610.365	5.0009	ppm	0.009304	0.2	204654	5.0009 ppm	Y 361.104	100.01748
Mg	279.078	49.760	ppm	0.12409	0.2	42554	49.760 ppm	Y 361.104	99.52039
Mn	293.305	5.0455	ppm	0.014018	0.3	58785	5.0455 ppm	Y 361.104	100.90965
Mo	202.032	1.0077	ppm	0.013685	1.4	3511.2	1.0077 ppm	Y 361.104	100.76830
Na	589.592	53.342	ppm	0.15192	0.3	7368894	53.342 ppm	Y 361.104	106.68456
Ni	221.648	5.0193	ppm	0.012169	0.2	6110.4	5.0193 ppm	Y 361.104	100.38659
Pb	220.353	5.0135	ppm	0.017481	0.3	6886.9	5.0135 ppm	Y 361.104	100.26944
Sb	217.582	1.0187	ppm	0.010199	1.0	501.82	1.0187 ppm	Y 361.104	101.87328
Se	196.026	5.0232	ppm	0.057675	1.1	1054.2	5.0232 ppm	Y 361.104	100.46346
Si	251.611	5.0633	ppm	0.014137	0.3	9556.2	5.0633 ppm	Y 361.104	101.26563
Sn	189.927	5.0128	ppm	0.015767	0.3	3061.2	5.0128 ppm	Y 361.104	100.25693
Sr	216.596	5.0719	ppm	0.011563	0.2	22137	5.0719 ppm	Y 361.104	101.43874
Ti	322.284	5.0079	ppm	0.016578	0.3	36180	5.0079 ppm	Y 361.104	100.15840
Tl	190.794	4.8442	ppm	0.052700	1.1	1771.9	4.8442 ppm	Y 361.104	96.88408
V	289.164	5.1242	ppm	0.016406	0.3	31630	5.1242 ppm	Y 361.104	102.48360
Zn	206.200	4.9974	ppm	0.024410	0.5	3240.2	4.9974 ppm	Y 361.104	99.94893
Zr	257.147	5.1180	ppm	0.014649	0.3	45834	5.1180 ppm	Y 361.104	102.36008

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	0.97276	185545	283.579	0.2

BLA01 (CCB) 3/29/03, 12:00:18 PM Rack 3, Tube 4

El	Wavelen.	Replicates Intensity (c/s)			
Ag	328.068	-22.732	-7.9670	-5.1635	
Al	237.312	-0.16825	-4.5017	-2.9653	
As	188.980	1.3418	0.77883	2.6226	
B	249.772	233.66	216.38	200.61	
Ba	233.527	79.121	78.503	80.987	
Be	234.861	-6.4049	0.051054	-2.8785	
Ca	315.887	154.98	147.60	141.83	
Cd	228.802	-0.64545	-1.7875	-3.8491	
Co	231.160	6.7124	8.8169	10.849	
Cr	267.716	22.097	17.231	12.284	
Cu	324.754	112.21	99.368	99.706	

El	Wavelen.	Replicates Intensity (c/s)			
Fe	261.382	11.684	10.815	11.816	
K	728.181	97.627	110.20	93.876	
Li	610.365	760.74	757.64	790.82	
Mg	279.078	3.8741	1.7285	5.5954	
Mn	293.305	10.830	8.3082	5.0632	
Mo	202.032	31.104	25.016	21.344	
Na	589.592	1284.1	1231.9	1240.0	
Na	568.821	-529.60	-462.11	-485.44	
Ni	221.648	0.29261	-0.80808	-0.92831	
Pb	220.353	1.8191	-4.7825	-0.57599	
Sb	217.582	-5.0236	-2.7272	-1.9515	
Se	196.026	4.3610	3.0544	2.7888	
Si	251.611	32.589	31.903	30.869	
Sn	189.927	0.78967	1.2002	1.1960	
Sr	216.596	2.0010	3.9605	-1.3064	
Ti	322.284	90.746	84.780	82.557	
Tl	190.794	8.0186	7.8725	6.0109	
V	289.164	-2.6290	4.3234	-3.4389	
Y	361.104	191022	191521	191267	
Zn	206.200	1.4861	0.93555	1.9907	
Zr	257.147	20.586	22.758	17.204	

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Ag	328.068	0.000105u	ppm	0.000299	286.0	-11.954	0.000105 ppm	Y 361.104	0.00010
Al	237.312	-0.005286u	ppm	0.004532	85.7	-2.5451	-0.005286 ppm	Y 361.104	-0.00529
As	188.980	0.008439	ppm	0.003521	41.7	1.5811	0.008439 ppm	Y 361.104	0.00844
B	249.772	0.019473	ppm	0.001554	8.0	216.88	0.019473 ppm	Y 361.104	0.01947
Ba	233.527	0.000027u	ppm	0.000041	153.5	79.537	0.000027 ppm	Y 361.104	0.00003
Be	234.861	0.000017u	ppm	0.000067	391.6	-3.0774	0.000017 ppm	Y 361.104	0.00002
Ca	315.887	0.000276u	ppm	0.001287	466.8	148.13	0.000276 ppm	Y 361.104	0.00028
Cd	228.802	-0.000333u	ppm	0.000237	71.1	-2.0940	-0.000333 ppm	Y 361.104	-0.00033
Co	231.160	-0.000126u	ppm	0.000448	355.5	8.7928	-0.000126 ppm	Y 361.104	-0.00013
Cr	267.716	0.000481	ppm	0.000186	38.6	17.204	0.000481 ppm	Y 361.104	0.00048
Cu	324.754	-0.000206u	ppm	0.000228	110.4	103.76	-0.000206 ppm	Y 361.104	-0.00021
Fe	261.382	0.004212	ppm	0.000377	9.0	11.438	0.004212 ppm	Y 361.104	0.00421
K	728.181	0.014143	ppm	0.005862	41.4	100.57	0.014143 ppm	Y 361.104	0.01414
Li	610.365	-0.001090u	ppm	0.000448	41.1	769.73	-0.001090 ppm	Y 361.104	-0.00109
Mg	279.078	0.003672	ppm	0.002265	61.7	3.7327	0.003672 ppm	Y 361.104	0.00367
Mn	293.305	0.000093u	ppm	0.000248	267.5	8.0671	0.000093 ppm	Y 361.104	0.00009

61

310

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	QC Value
Mo	202.032	0.005304	ppm	0.001418	26.7	25.821	0.005304 ppm	Y 361.104	0.00530
Na	589.592	0.000212	ppm	0.000212	100.0	1252.0	0.000212 ppm	Y 361.104	0.00021
Ni	221.648	0.000071u	ppm	0.000553	774.9	-0.48126	0.000071 ppm	Y 361.104	0.00007
Pb	220.353	0.001207u	ppm	0.002431	201.4	-1.1798	0.001207 ppm	Y 361.104	0.00121
Sb	217.582	-0.004499u	ppm	0.003215	71.5	-3.2341	-0.004499 ppm	Y 361.104	-0.00450
Se	196.026	0.013641	ppm	0.004012	29.4	3.4014	0.013641 ppm	Y 361.104	0.01364Z
Si	251.611	0.001554	ppm	0.000460	29.6	31.787	0.001554 ppm	Y 361.104	0.00155
Sn	189.927	0.001559	ppm	0.000386	24.8	1.0619	0.001559 ppm	Y 361.104	0.00156
Sr	216.596	0.000502u	ppm	0.000610	121.5	1.5517	0.000502 ppm	Y 361.104	0.00050
Ti	322.284	0.000440u	ppm	0.000588	133.4	86.028	0.000440 ppm	Y 361.104	0.00044
Tl	190.794	0.022613	ppm	0.003078	13.6	7.3007	0.022613 ppm	Y 361.104	0.02261Z
V	289.164	-0.000107u	ppm	0.000689	643.0	-0.58148	-0.000107 ppm	Y 361.104	-0.00011
Zn	206.200	0.000303u	ppm	0.000816	269.0	1.4708	0.000303 ppm	Y 361.104	0.00030
Zr	257.147	0.000655	ppm	0.000313	47.7	20.183	0.000655 ppm	Y 361.104	0.00066

El	Wavelen.	Ratio	Int. (c/s)	SD(Int)	%RSD
Y	361.104	1.0028	191270	249.426	0.1

H143868 1:5 (Samp) **3/29/03, 12:04:14 PM** **Rack 3, Tube 5**
Weight: 1 **Volume: 1** **Dilution: 5**

El	Wavelen.	Replicates Intensity (c/s)		
Ag	328.068	85.380	91.104	95.678
Al	237.312	11.347	12.528	10.668
As	188.980	-1.0564	-0.72387	-0.50082
B	249.772	13376	13457	13541
Ba	233.527	697.91	692.01	701.53
Be	234.861	2.4226	-3.3085	2.0383
Ca	315.887	2115209	2119207	2131908
Cd	228.802	65.837	68.476	62.560
Co	231.160	24.947	25.660	27.588
Cr	267.716	54.552	50.577	53.447
Cu	324.754	7164.6	7157.5	7238.6
Fe	261.382	41.906	44.933	39.801
K	728.181	8188.6	8143.0	8213.3
Li	610.365	-5994.0	-6000.6	-6048.5
Mg	279.078	33201	33384	33453
Mn	293.305	1483.5	1472.5	1485.1
Mo	202.032	723.06	739.40	750.13
Na	589.592	12201619	12266656	12259117

El	Wavelen.	Replicates Intensity (c/s)		
Na	568.821	22724	22808	22806
Ni	221.648	1411.0	1416.2	1414.6
Pb	220.353	-0.18936	1.3743	0.28958
Sb	217.582	9.9730	5.5355	10.721
Se	196.026	4.6255	4.3341	7.0746
Si	251.611	8599.5	8634.8	8645.4
Sn	189.927	-0.20296	1.2881	1.7840
Sr	216.596	1545.7	1552.5	1550.3
Ti	322.284	89.452	89.271	96.090
Tl	190.794	2.0797	-0.33308	-1.4876
V	289.164	1.1292	0.85705	1.7541
Y	361.104	182009	181458	181559
Zn	206.200	3.1610	3.6488	3.1066
Zr	257.147	1209.2	1240.7	1242.7

El	Wavelen.	Sol'n Conc.	Units	SD	%RSD	Int. (c/s)	Calc Conc.	IS	DF
Ag	328.068	0.002975	ppm	0.000164	5.5	90.721	0.014873 ppm	Y 361.104	1.0000
Al	237.312	0.023168	ppm	0.001941	8.4	11.514	0.11584 ppm	Y 361.104	1.0000
As	188.980	-0.000355u	ppm	0.001042	293.5	-0.76035	-0.001775 ppm	Y 361.104	1.0000
B	249.772	1.2643	ppm	0.007768	0.6	13458	6.3215 ppm	Y 361.104	1.0000
Ba	233.527	0.019829	ppm	0.000154	0.8	697.15	0.099145 ppm	Y 361.104	1.0000
Be	234.861	0.000092	ppm	0.000066	72.2	0.38414	0.000458 ppm	Y 361.104	1.0000
Ca	315.887	414.39	ppm	1.6950	0.4	2122141	2071.9 ppm	Y 361.104	1.0000
Cd	228.802	0.009484	ppm	0.000432	4.6	65.631	0.047420 ppm	Y 361.104	1.0000
Co	231.160	0.002754	ppm	0.000296	10.8	26.065	0.013768 ppm	Y 361.104	1.0000
Cr	267.716	0.001827	ppm	0.000078	4.3	52.859	0.009136 ppm	Y 361.104	1.0000
Cu	324.754	0.22006	ppm	0.001397	0.6	7186.9	1.1003 ppm	Y 361.104	1.0000
Fe	261.382	0.025621	ppm	0.001791	7.0	42.213	0.12810 ppm	Y 361.104	1.0000
K	728.181	5.5389	ppm	0.024331	0.4	8181.6	27.694 ppm	Y 361.104	1.0000
Li	610.365	-0.049940u	ppm	0.000728	1.5	-6014.3	-0.24970 ppm	Y 361.104	1.0000
Mg	279.078	38.992	ppm	0.15236	0.4	33346	194.96 ppm	Y 361.104	1.0000
Mn	293.305	0.12648	ppm	0.000589	0.5	1480.4	0.63239 ppm	Y 361.104	1.0000
Mo	202.032	0.20999	ppm	0.003920	1.9	737.53	1.0500 ppm	Y 361.104	1.0000
Na	589.592	86.517	ppm	0.23647	0.3	12242464	432.58 ppm	Y 361.104	1.0000
Na	568.821	82.054	ppm	0.17325	0.2	22779	410.27 ppm	Y 361.104	1.0000
Ni	221.648	1.1557	ppm	0.002209	0.2	1413.9	5.7786 ppm	Y 361.104	1.0000
Pb	220.353	0.002824	ppm	0.000583	20.6	0.49150	0.014119 ppm	Y 361.104	1.0000
Sb	217.582	0.020653	ppm	0.005641	27.3	8.7432	0.10327 ppm	Y 361.104	1.0000
Se	196.026	0.022916	ppm	0.007176	31.3	5.3447	0.11458 ppm	Y 361.104	1.0000

62

31

Method Name: MERCURY
Method Description: MERCURY
Element: Hg

HgFIMS #256
4/1/03
040272

r= 0.99989
m= 10.21208
y= -0.0005

Date: 04/01/2003
Technique:FI-MHS
Calibration Type:
Hg, Calc. Intercept : Linear
Wavelength: 253.7 nm
Sample Info Name: HG04-01.SIF

A623858-862

Results Data Set Name: HG04-01

Element: Hg Seq. No.: 4 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1			0.0002	0.0025	0.0002	11:48:50	No

Auto-zero performed.

Element: Hg Seq. No.: 5 AS Loc.: 2 Date: 04/01/2003
Sample ID: 1

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00021	0.0017	0.0097	0.0019	11:50:07	No

[Hg] Standard number 1 applied. [0.00020]
Correlation Coefficient: 1.00000 Slope: 8.35703
Intercept : 0.00000

105 %

Element: Hg Seq. No.: 6 AS Loc.: 3 Date: 04/01/2003
Sample ID: 2

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00048	0.0045	0.0215	0.0047	11:51:25	No

[Hg] Standard number 2 applied. [0.00050]
Correlation Coefficient: 0.99961 Slope: 8.92967
Intercept : -0.00004

96 %

Element: Hg Seq. No.: 7 AS Loc.: 4 Date: 04/01/2003
Sample ID: 3

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00099	0.0096	0.0464	0.0098	11:52:45	No

[Hg] Standard number 3 applied. [0.00100]
Correlation Coefficient: 0.99906 Slope: 9.68225
Intercept : -0.00018

99 %

Element: Hg Seq. No.: 8 AS Loc.: 5 Date: 04/01/2003
Sample ID: 4

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00197	0.0197	0.0937	0.0199	11:54:05	No

[Hg] Standard number 4 applied. [0.00200]
Correlation Coefficient: 0.99972 Slope: 9.92028
Intercept : -0.00026

98.5 % 63

312

Element: Hg Seq. No.: 9 AS Loc.: 6 Date: 04/01/2003
Sample ID: 5

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00299	0.0301	0.1409	0.0303	11:55:25	No

[Hg] Standard number 5 applied. [0.00300]
Correlation Coefficient: 0.99983 Slope: 10.07273
Intercept : -0.00034

99.6%

Element: Hg Seq. No.: 10 AS Loc.: 7 Date: 04/01/2003
Sample ID: 6

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		0.00502	0.0509	0.2381	0.0511	11:56:48	No

[Hg] Standard number 6 applied. [0.00500]
Correlation Coefficient: 0.99989 Slope: 10.21208
Intercept : -0.00045

100.4%

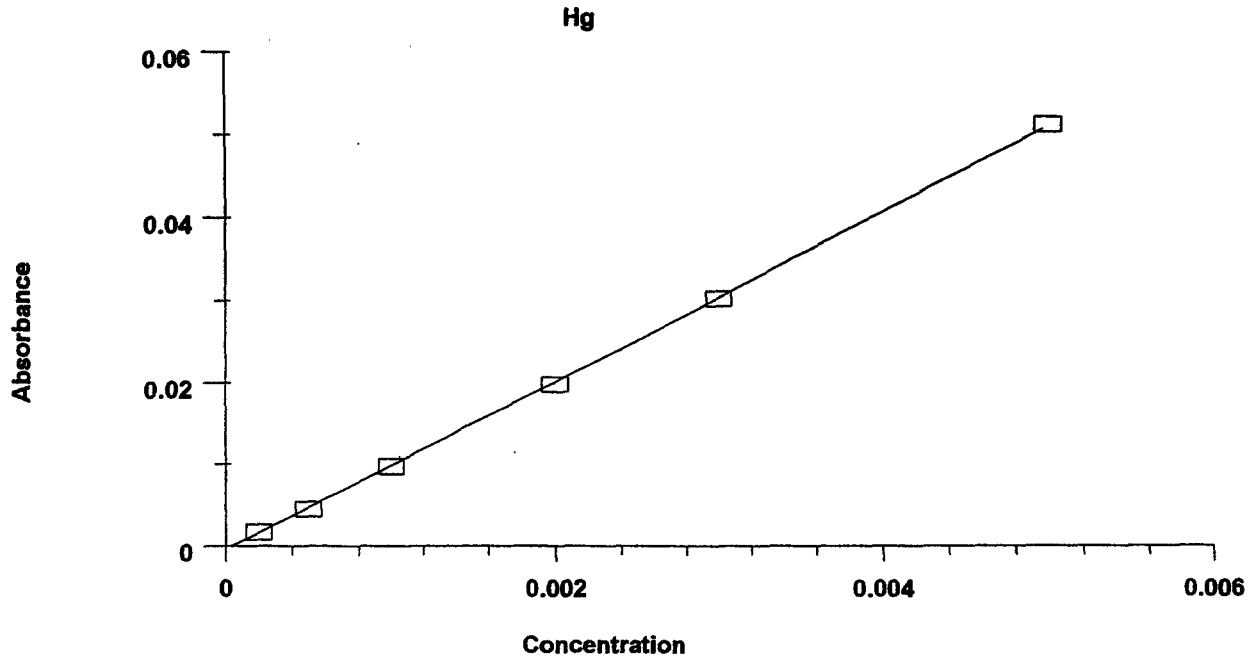
Calibration data for Hg

Standard ID	Mean Signal (Pk Height)	Entered Concentration (mg/L)	Calculated Concentration (mg/L)	Standard Deviation	%RSD
BLA01	0.0002	-----	----	----	----
1	0.0017	0.00020	0.00021	----	----
2	0.0045	0.00050	0.00048	----	----
3	0.0096	0.00100	0.00099	----	----
4	0.0197	0.00200	0.00197	----	----
5	0.0301	0.00300	0.00299	----	----
6	0.0509	0.00500	0.00502	----	----
BLA01	0.0002	-----	----	----	----

Correlation Coefficient: 0.99989 Slope: 10.21208 Intercept: -0.0005

64

313



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Element: Hg Seq. No.: 11 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00006	0.00006	0.0001	0.0017	0.0003	11:58:12	No

Reagent Blank Performed

==========

Element: Hg Seq. No.: 12 AS Loc.: 9 Date: 04/01/2003
Sample ID: ICV01

TV=0.00200

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00201	0.00201	0.0201	0.0930	0.0203	11:59:28	No

QC value within specified limits.

100.5%

==========

Element: Hg Seq. No.: 13 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00006	0.00006	0.0001	0.0018	0.0003	12:00:44	No

QC value within specified limits.

==========

Element: Hg Seq. No.: 14 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

TV=0.00304

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00304	0.00304	0.0306	0.1418	0.0308	12:02:03	No

QC value within specified limits.

GS

101.3%

314

Element: Hg Seq. No.: 15 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00005	0.00005	0.0001	0.0003	0.0003	12:03:22	No

QC value within specified limits.

Element: Hg Seq. No.: 16 AS Loc.: 2 Date: 04/01/2003
Sample ID: CDL

TV=0.00023

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00023	0.00023	0.0019	0.0110	0.0021	12:04:39	No

QC value within specified limits.

115%

Element: Hg Seq. No.: 17 AS Loc.: 10 Date: 04/01/2003
Sample ID: LCS Q1482643

TV=0.0020

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00200	0.00200	0.0199	0.0931	0.0203	12:05:56	No

100%

Element: Hg Seq. No.: 18 AS Loc.: 11 Date: 04/01/2003
Sample ID: BLA02 Q1482644

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00004	0.00004	-0.0001	0.0012	0.0003	12:07:12	No

Element: Hg Seq. No.: 19 AS Loc.: 12 Date: 04/01/2003
Sample ID: A623756 40/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0001	0.0009	0.0002	12:08:31	No

Element: Hg Seq. No.: 20 AS Loc.: 13 Date: 04/01/2003
Sample ID: SPI02 Q1482645 A623756

TV=0.0010

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00104	0.00104	0.0102	0.0490	0.0105	12:09:50	No

104%

Element: Hg Seq. No.: 21 AS Loc.: 14 Date: 04/01/2003
Sample ID: DPS02 Q1482646 A623756

TV=0.0010

r=28

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00107	0.00107	0.0104	0.0493	0.0108	12:11:10	No

107 %

Element: Hg Seq. No.: 22 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

TV=0.0030

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00307	0.00307	0.0309	0.1448	0.0313	12:12:32	No

102.3%

315

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0001	0.0019	0.0002	12:24:14	No

Element: Hg Seq. No.: 32 AS Loc.: 23 Date: 04/01/2003
Sample ID: A623886 40/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0002	0.0011	0.0002	12:25:30	No

Element: Hg Seq. No.: 33 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

JV=0.0030

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00311	0.00311	0.0313	0.1434	0.0316	12:26:50	No

103.7%

Element: Hg Seq. No.: 34 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0001	0.0019	0.0002	12:28:10	No

Element: Hg Seq. No.: 35 AS Loc.: 24 Date: 04/01/2003
Sample ID: LCS Q1482651

JV=0.0020

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00214	0.00214	0.0214	0.0983	0.0217	12:29:27	No

107%

Element: Hg Seq. No.: 36 AS Loc.: 25 Date: 04/01/2003
Sample ID: BLA02 Q1482652

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00001	0.00001	-0.0003	0.0003	0.0000	12:30:46	No

Element: Hg Seq. No.: 37 AS Loc.: 26 Date: 04/01/2003
Sample ID: A623384 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0003	-0.0005	0.0001	12:32:05	No

Element: Hg Seq. No.: 38 AS Loc.: 27 Date: 04/01/2003
Sample ID: SPI02 Q1482653 A623384

JV=0.0010

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00078	0.00078	0.0076	0.0393	0.0079	12:33:25	No

r = 3.8
78%

Element: Hg Seq. No.: 39 AS Loc.: 28 Date: 04/01/2003
Sample ID: DPS02 Q1482654 A623384

67

JV=0.0010

81863316

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00081	0.00081	0.0079	0.0427	0.0082	12:34:46	No

Element: Hg Seq. No.: 40 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

7LE 0.0530

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00316	0.00316	0.0319	0.1478	0.0322	12:36:08	No

105.3%

Element: Hg Seq. No.: 41 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00004	0.00004	-0.0001	0.0012	0.0003	12:37:27	No

Element: Hg Seq. No.: 42 AS Loc.: 29 Date: 04/01/2003
Sample ID: A623607 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0002	0.0008	0.0002	12:38:46	No

Element: Hg Seq. No.: 43 AS Loc.: 30 Date: 04/01/2003
Sample ID: A623697 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0002	0.0009	0.0001	12:40:07	No

Element: Hg Seq. No.: 44 AS Loc.: 31 Date: 04/01/2003
Sample ID: A623858 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0002	0.0004	0.0001	12:41:29	No

Element: Hg Seq. No.: 45 AS Loc.: 32 Date: 04/01/2003
Sample ID: A623859 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0002	-0.0002	0.0001	12:42:46	No

Element: Hg Seq. No.: 46 AS Loc.: 33 Date: 04/01/2003
Sample ID: A623860 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0002	0.0005	0.0001	12:44:01	No

Element: Hg Seq. No.: 47 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

Repl	SampleConc	StndConc	BlnkCorr	Peak	Peak	Time	Peak

68

35

CCV

TV=0.0030

#	mg/L	mg/L	Signal	Area	Height		Stored
1	0.00315	0.00315	0.0317	0.1452	0.0320	12:45:20	No

105%

Element: Hg Seq. No.: 48 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0002	0.0005	0.0002	12:46:38	No

Element: Hg Seq. No.: 49 AS Loc.: 34 Date: 04/01/2003
Sample ID: A623861 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00002	0.00002	-0.0002	0.0000	0.0001	12:47:54	No

Element: Hg Seq. No.: 50 AS Loc.: 35 Date: 04/01/2003
Sample ID: SPI03 Q1482655 A623861

TV=0.0020

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00034	0.00034	0.0030	0.0149	0.0034	12:49:10	No

17%

Element: Hg Seq. No.: 51 AS Loc.: 36 Date: 04/01/2003
Sample ID: DPS03 Q1482656 A623861

TV=0.0020

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00032	0.00032	0.0028	0.0136	0.0032	12:50:27	No

r=6.1

16%

Element: Hg Seq. No.: 52 AS Loc.: 37 Date: 04/01/2003
Sample ID: A623862 4/40

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0001	0.0021	0.0002	12:51:43	No

Element: Hg Seq. No.: 53 AS Loc.: 8 Date: 04/01/2003
Sample ID: CCV

TV=0.0030

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00316	0.00316	0.0319	0.1449	0.0322	12:53:03	No

105.3%

Element: Hg Seq. No.: 54 AS Loc.: 1 Date: 04/01/2003
Sample ID: BLA01

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.00003	0.00003	-0.0002	0.0009	0.0002	12:54:22	No

Element: Hg Seq. No.: 55 AS Loc.: 38 Date: 04/01/2003
Sample ID: LCS Q1482647

Repl #	SampleConc mg/L	StndConc mg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored

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CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	27-MAR-03		A623858
	Complete 02-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled	

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311

Analyst: M. HALL Analysis Date: 27-MAR-03 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	11.3		Std. Units
ADJUSTED PH	10.6		Std. Units
BUFFER SOLUTION PH	2.85		Std. Units
FINAL PH	11.4		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	23.5		Degrees C
INITIAL TIME	17156.9		Hours
FINAL TIME	17174.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Analyst: L. SMITH Analysis Date: 28-MAR-03 15:30 Instrument: PREP Test: P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.38	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

DILUTION 1:5

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.050	mg/L

DILUTION 1:5

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L
DILUTION 1:5			

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	45.	0.050	mg/L
DILUTION 1:5			

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L
DILUTION 1:5			

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 31-MAR-03 15:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 01-APR-03 11:59 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L
DILUTION 1:5			

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M634.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M638.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:17 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

DILUTION 1:5

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 21.2 C.
Sample chain of custody number 96508.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : R.E. Sence

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CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	27-MAR-03		A623859
	Complete 02-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled	

Sample Description

CLIENT ID: SE STAB VARIANCE TEST 2
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: TCLP METALS PLUS NICKEL
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 27-MAR-03 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	11.4		Std. Unit
ADJUSTED PH	10.7		Std. Unit
BUFFER SOLUTION PH	2.85		Std. Unit
FINAL PH	11.6		Std. Unit
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	23.5		Degrees C
INITIAL TIME	17156.9		Hours
FINAL TIME	17174.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 28-MAR-03 15:30 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A623859 SE STAB VARIANCE TEST 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.42	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L
DILUTION 1:5			

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L
DILUTION 1:5			

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	28.	0.050	mg/L
DILUTION 1:5			

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L
DILUTION 1:5			

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 31-MAR-03 15:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 01-APR-03 11:59 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L
DILUTION 1:5			

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

TCLP ZINC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:21 Instrument: ICP Test: M639.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L
DILUTION 1:5			

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 21.2 C.
Sample chain of custody number 96508.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.F. Spence QP

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CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	27-MAR-03		A623860
	Complete 02-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled	

Report To

SHANNON WILSON
HERITAGE ENVIRONMENTAL SERVICES LLC
TECHNOLOGY GROUP
7901 WEST MORRIS
INDIANAPOLIS, IN 46231

Bill To

HERB WISSEL
HERITAGE ENVIRONMENTAL SERVICES, LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SE STAB VARIANCE TEST 3
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: TCLP METALS PLUS NICKEL
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 27-MAR-03 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	11.4		Std. Units
ADJUSTED PH	10.9		Std. Units
BUFFER SOLUTION PH	2.85		Std. Units
FINAL PH	11.5		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	23.5		Degrees C
INITIAL TIME	17156.9		Hours
FINAL TIME	17174.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 28-MAR-03 15:30 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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 (continued on next page)

HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A623860 SE STAB VARIANCE TEST 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.35	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L
DILUTION 1:5			

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L
DILUTION 1:5			

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	38.	0.050	mg/L
DILUTION 1:5			

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 31-MAR-03 15:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 01-APR-03 11:59 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L

TCLP THALLIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M634.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

TCLP VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M638.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

TCLP ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:25 Instrument: ICP Test: M639.8.0

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0

Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

DILUTION 1:5

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 21.2 C.
Sample chain of custody number 96508.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.K. Spence QP

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CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	27-MAR-03		A623861
	Complete 02-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled	

Report To

SHANNON WILSON
HERITAGE ENVIRONMENTAL SERVICES LLC
TECHNOLOGY GROUP
7901 WEST MORRIS
INDIANAPOLIS, IN 46231

Bill To

HERB WISSEL
HERITAGE ENVIRONMENTAL SERVICES, LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SE STAB VARIANCE TEST 4
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: TCLP METALS PLUS NICKEL
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 27-MAR-03 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	11.3		Std. Units
ADJUSTED PH	10.7		Std. Units
BUFFER SOLUTION PH	2.85		Std. Units
FINAL PH	11.6		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	23.5		Degrees C
INITIAL TIME	17156.9		Hours
FINAL TIME	17174.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 28-MAR-03 15:30 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A623861 SE STAB VARIANCE TEST 4

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
		[illegible]	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.36	0.050	mg/L

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L
DILUTION 1:5			

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L
DILUTION 1:5			

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	40.	0.050	mg/L
DILUTION 1:5			

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 31-MAR-03 15:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 01-APR-03 11:59 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L
DILUTION 1:5			

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.020	mg/L
DILUTION 1:5			

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.10	mg/L
DILUTION 1:5			

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L
DILUTION 1:5			

TCLP ZINC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 10:37 Instrument: ICP Test: M639.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L
DILUTION 1:5			

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 21.2 C.
Sample chain of custody number 96508.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : R.C. Spence

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C E R T I F I C A T E O F A N A L Y S I S

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	27-MAR-03		A623862
	Complete 02-APR-03	PO Number INTRA	
	Printed 17-APR-03	Sampled	

Report To	Bill To
SHANNON WILSON HERITAGE ENVIRONMENTAL SERVICES LLC TECHNOLOGY GROUP 7901 WEST MORRIS INDIANAPOLIS, IN 46231	HERB WISSEL HERITAGE ENVIRONMENTAL SERVICES, LLC 7901 WEST MORRIS STREET INDIANAPOLIS, IN 46231

Sample Description

CLIENT ID: SE STAB VARIANCE TEST 5
MATRIX TYPE: SLUDGE, SOIL, SOLID OR SEDIMENT
DESCRIPTION: TCLP METALS PLUS NICKEL
Submitter Code :7402

TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311
Analyst: M. HALL Analysis Date: 27-MAR-03 Instrument: PREP Test: P106.1.0

Parameter	Result	Det. Limit	Units
TOTAL SAMPLE WEIGHT	100.0		Grams
LIQUID FRACTION (GRAMS)	NA		Grams
EXTRACTED SAMPLE	100.0		Grams
SOLIDS	100		Percent
9.5 MM SIEVE TEST	YES		Passed
INITIAL PH	11.5		Std. Units
ADJUSTED PH	10.6		Std. Units
BUFFER SOLUTION PH	2.85		Std. Units
FINAL PH	11.5		Std. Units
VOLUME BUFFERED SOLUTION	2000		mL
VOLUME EXTRACT FILTERED	2000		mL
VOLUME LIQUID (ADD BACK)	NA		mL
TOTAL VOLUME FILTRATE	2000		mL
AMBIENT TEMPERATURE	23.5		Degrees C
INITIAL TIME	17156.9		Hours
FINAL TIME	17174.3		Hours
PHASE 0 VOLUME (REP 0)	2000		mL
PHASE 0 WEIGHT	NA		Grams
PHASE 0 DENSITY	NA		g/mL
PHASE 1 VOLUME (REP 1)	NA		mL
PHASE 1 WEIGHT	NA		Grams
PHASE 1 DENSITY	NA		g/mL

FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A
Analyst: L. SMITH Analysis Date: 28-MAR-03 15:30 Instrument: PREP Test: P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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HERITAGE ENVIRONMENTAL SERVICES, LLC Sample ID: A623862 SE STAB VARIANCE TEST 5

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

TCLP ARSENIC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M603.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.050	mg/L

TCLP BARIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M604.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BARIUM	0.38	0.050	mg/L

DILUTION 1:5

TCLP CADMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M608.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.025	mg/L

DILUTION 1:5

TCLP CHROMIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M610.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.050	mg/L

TCLP LEAD ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M616.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.050	mg/L

TCLP NICKEL ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M622.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

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 (continued on next page)

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.025	mg/L
DILUTION 1:5			

TCLP SELENIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M628.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SELENIUM	38.	0.050	mg/L

TCLP SILVER ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M630.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.050	mg/L

MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A
Analyst: D. THOMPSON Analysis Date: 31-MAR-03 15:00 Instrument: PREP Test: P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	4.0		mL
FINAL VOLUME	40		mL

TCLP MERCURY CVAA SW846-7470A NELAC:Y
Analyst: D. DRABENSTOTT Analysis Date: 01-APR-03 11:59 Instrument: CVAA Test: M620.4.0
Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A P131.9.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.0020	mg/L

TCLP ANTIMONY ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M602.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.050	mg/L

TCLP BERYLLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M605.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
BERYLLIUM			

TCLP THALLIUM ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M634.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.050	mg/L

DILUTION 1:5

TCLP VANADIUM ICP SW846-6010B NELAC:N
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M638.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.050	mg/L

TCLP ZINC ICP SW846-6010B NELAC:Y
Analyst: J. KRAMER Analysis Date: 29-MAR-03 11:28 Instrument: ICP Test: M639.8.0
Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A P130.8.0
Prep: TOX CHAR LEACHING PROCEDURE (TCLP METALS ONLY) SW846-1311 P106.1.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.10	mg/L

DILUTION 1:5

Sample Comments

BDL Below Detection Limit
NA Not Applicable
YES Yes

Sample was not received on ice at temperature 21.2 C.
Sample chain of custody number 96508.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.
The sample results relate only to the analytes of interest tested or to the sample as received by the lab.
Heritage Environmental Services, LLC certifies that the test results indicated as NELAC (National Environmental Laboratory Accreditation Conference) accredited (Yes for NELAC) meet all requirements of NELAC and Illinois EPA Part 186 unless otherwise explained or justified as to the the exact nature of the deviations.
Heritage Environmental Services, LLC is accredited under Illinois NELAC accreditation number 100401.
Arizona License Number AZ0627.

Approved : P.K. Sence QP

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QUALITY ASSURANCE REPORT

Service Location

HERITAGE ENVIRONMENTAL SERVICES, LLC
COMMERCIAL LABORATORY OPERATIONS
7901 W. MORRIS ST.
INDIANAPOLIS, IN 46231
(317)243-8304

Report Date
14-APR-03

Submitter

HERITAGE ENVIRONMENTAL SERVICES LLC
SHANNON WILSON
TECHNOLOGY GROUP
7901 WEST MORRIS
INDIANAPOLIS, IN 46231

Client ID	Lab ID	Date-Time Sampled	Date Received	Date Complete	Description
SE STAB VARIANC	A623858		27-MAR-03	02-APR-03	DESCRIPTION: TCLP METALS PLUS NICKEL
SE STAB VARIANC	A623859		27-MAR-03	02-APR-03	DESCRIPTION: TCLP METALS PLUS NICKEL
SE STAB VARIANC	A623860		27-MAR-03	02-APR-03	DESCRIPTION: TCLP METALS PLUS NICKEL
SE STAB VARIANC	A623861		27-MAR-03	02-APR-03	DESCRIPTION: TCLP METALS PLUS NICKEL
SE STAB VARIANC	A623862		27-MAR-03	02-APR-03	DESCRIPTION: TCLP METALS PLUS NICKEL

TCLP ANTIMONY ICP SW846-6010B M602.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	ANTIMONY	1		1.02	mg/L	102	
CDL01	Q1482350	PERKIN	ANTIMONY	0.120		0.114	mg/L	95	
ICS-A	Q1482353	PERKIN	ANTIMONY	0.6		0.615	mg/L	102.5	
CCV	Q1482400	INORGAN	ANTIMONY	1		1.02	mg/L	102	
BLA01	Q1482401	NA	ANTIMONY			< 0.00400	mg/L		
BLA02	Q1482124	NA	ANTIMONY			< 0.00400	mg/L		
LCS	Q1482125	SPEX	ANTIMONY	0.5		0.540	mg/L	108	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
[illegible]02	Q1482127	A623861	ANTIMONY	0		BDL	mg/L		
[illegible]2	Q1482126	A623861	ANTIMONY	0	1	1.10	mg/L	110	
[illegible]3	Q1482128	A623861	ANTIMONY	0	4	4.10	mg/L	102.5	
DPS03	Q1482129	A623861	ANTIMONY	0	4	4.06	mg/L	101.5	1
CCV	Q1482402	INORGAN	ANTIMONY	1		1.03	mg/L	103	
BLA01	Q1482403	NA	ANTIMONY			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	ANTIMONY	1		1.01	mg/L	101	
BLA01	Q1482405	NA	ANTIMONY			< 0.00400	mg/L		
CDL01	Q1482406	PERKIN	ANTIMONY	0.120		0.116	mg/L	96.7	
ICS-A	Q1482408	PERKIN	ANTIMONY	0.6		0.616	mg/L	102.7	

TCLP ARSENIC ICP SW846-6010B M603.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
[illegible]3	Q1482128	A623861	R450473

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Anal Run
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	ARSENIC	1		0.984	mg/L	98.4	
CDL01	Q1482351	INORGAN	ARSENIC	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	ARSENIC	0.1		0.100	mg/L	100	
CCV	Q1482400	INORGAN	ARSENIC	5		5.08	mg/L	101.6	
BLA01	Q1482401	NA	ARSENIC			0.00775	mg/L		
BLA02	Q1482124	NA	ARSENIC			< 0.00400	mg/L		
LCS	Q1482125	SPEX	ARSENIC	2		2.08	mg/L	104	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	ARSENIC	0		BDL	mg/L		
SPI02	Q1482126	A623861	ARSENIC	0	4	4.28	mg/L	107	
SPI03	Q1482128	A623861	ARSENIC	0	4	4.18	mg/L	104.5	
DPS03	Q1482129	A623861	ARSENIC	0	4	4.15	mg/L	103.8	.7
CCV	Q1482402	INORGAN	ARSENIC	5		5.12	mg/L	102.4	
BLA01	Q1482403	NA	ARSENIC			0.00772	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	ARSENIC	5		5.05	mg/L	101	
BLA01	Q1482405	NA	ARSENIC			0.00848	mg/L		
CDL01	Q1482406	PERKIN	ARSENIC	0.02		0.0200	mg/L	100	
ICS-A	Q1482408	PERKIN	ARSENIC	0.1		0.0884	mg/L	88.4	

TCLP BARIUM ICP SW846-6010B M604.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec
ICV01	Q1482346	PERKIN	BARIUM	1		1.02	mg/L	102

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CDL01	Q1482351	INORGAN	BARIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	BARIUM	0.500		0.526	mg/L	105.2	
CCV	Q1482400	INORGAN	BARIUM	5.00		4.96	mg/L	99.2	
BLA01	Q1482401	NA	BARIUM			< 0.00400	mg/L		
BLA02	Q1482124	NA	BARIUM			< 0.00400	mg/L		
LCS	Q1482125	SPEX	BARIUM	2		2.13	mg/L	106.5	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	BARIUM	0.364		0.360	mg/L		1.1
SPI02	Q1482126	A623861	BARIUM	0.364	4	4.60	mg/L	105.9	
SPI03	Q1482128	A623861	BARIUM	0.364	1	1.37	mg/L	100.6	
DPS03	Q1482129	A623861	BARIUM	0.364	1	1.36	mg/L	99.6	1
CCV	Q1482402	INORGAN	BARIUM	5.00		4.98	mg/L	99.6	
BLA01	Q1482403	NA	BARIUM			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	BARIUM	5.00		4.92	mg/L	98.4	
BLA01	Q1482405	NA	BARIUM			< 0.00400	mg/L		
ICS-A	Q1482408	PERKIN	BARIUM	0.500		0.521	mg/L	104.2	

TCLP BERYLLIUM ICP SW846-6010B M605.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	BERYLLIUM	1		1.01	mg/L	101	
CDL01	Q1482351	INORGAN	BERYLLIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	BERYLLIUM	0.500		0.527	mg/L	105.4	
CCV	Q1482400	INORGAN	BERYLLIUM	5.00		5.03	mg/L	100.6	
BLA01	Q1482401	NA	BERYLLIUM			< 0.00160	mg/L		
BLA02	Q1482124	NA	BERYLLIUM			< 0.00160	mg/L		
LCS	Q1482125	SPEX	BERYLLIUM	0.05		0.0531	mg/L	106.2	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	BERYLLIUM	0		BDL	mg/L		
SPI02	Q1482126	A623861	BERYLLIUM	0	0.1	0.106	mg/L	106	
SPI03	Q1482128	A623861	BERYLLIUM	0	2	2.00	mg/L	100	
DPS03	Q1482129	A623861	BERYLLIUM	0	2	1.99	mg/L	99.5	.5

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q1482402	INORGAN	BERYLLIUM	5.00		5.07	mg/L	101.4	
BLA01	Q1482403	NA	BERYLLIUM			< 0.00160	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	BERYLLIUM	5.00		5.02	mg/L	100.4	
BLA01	Q1482405	NA	BERYLLIUM			< 0.00160	mg/L		
CDL01	Q1482406	PERKIN	BERYLLIUM	0.010		0.0103	mg/L	103	
ICS-A	Q1482408	PERKIN	BERYLLIUM	0.500		0.529	mg/L	105.8	

TCLP CADMIUM ICP SW846-6010B M608.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	CADMIUM	1		1.04	mg/L	104	
CDL01	Q1482351	INORGAN	CADMIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	CADMIUM	1.00		1.09	mg/L	109	
CCV	Q1482400	INORGAN	CADMIUM	5.00		5.07	mg/L	101.4	
BLA01	Q1482401	NA	CADMIUM			< 0.00200	mg/L		
BLA02	Q1482124	NA	CADMIUM			< 0.00200	mg/L		
LCS	Q1482125	SPEX	CADMIUM	0.05		0.0552	mg/L	110.4	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	CADMIUM	0		BDL	mg/L		
SPI02	Q1482126	A623861	CADMIUM	0	0.1	0.110	mg/L	110	
SPI03	Q1482128	A623861	CADMIUM	0	0.2	0.211	mg/L	105.5	
DPS03	Q1482129	A623861	CADMIUM	0	0.2	0.208	mg/L	104	1.4
CCV	Q1482402	INORGAN	CADMIUM	5.00		5.12	mg/L	102.4	
BLA01	Q1482403	NA	CADMIUM			< 0.00200	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	CADMIUM	5.00		5.04	mg/L	100.8	
BLA01	Q1482405	NA	CADMIUM			< 0.00200	mg/L		
CDL01	Q1482406	PERKIN	CADMIUM	0.010		0.0104	mg/L	104	
ICS-A	Q1482408	PERKIN	CADMIUM	1.00		1.11	mg/L	111	

HERITAGE ENVIRONMENTAL SERVICES, LLC

TCLP CHROMIUM ICP SW846-6010B M610.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	CHROMIUM	1		1.05	mg/L	105	
CDL01	Q1482351	INORGAN	CHROMIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	CHROMIUM	0.500		0.510	mg/L	102	
CCV	Q1482400	INORGAN	CHROMIUM	5.00		5.04	mg/L	100.8	
BLA01	Q1482401	NA	CHROMIUM			< 0.00400	mg/L		
BLA02	Q1482124	NA	CHROMIUM			< 0.00400	mg/L		
LCS	Q1482125	SPEX	CHROMIUM	0.2		0.217	mg/L	108.5	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	CHROMIUM	0		BDL	mg/L		
SPI02	Q1482126	A623861	CHROMIUM	0	0.4	0.424	mg/L	106	
SPI03	Q1482128	A623861	CHROMIUM	0	0.4	0.413	mg/L	103.3	
DPS03	Q1482129	A623861	CHROMIUM	0	0.4	0.411	mg/L	102.8	.5
CCV	Q1482402	INORGAN	CHROMIUM	5.00		5.08	mg/L	101.6	
BLA01	Q1482403	NA	CHROMIUM			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	CHROMIUM	5.00		5.02	mg/L	100.4	
BLA01	Q1482405	NA	CHROMIUM			< 0.00400	mg/L		
CDL01	Q1482406	PERKIN	CHROMIUM	0.020		0.0216	mg/L	108	
ICS-A	Q1482408	PERKIN	CHROMIUM	0.500		0.521	mg/L	104.2	

TCLP LEAD ICP SW846-6010B M616.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Anal Run
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	LEAD	1		1.04	mg/L	104	
CDL01	Q1482351	INORGAN	LEAD	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	LEAD	1.00		0.992	mg/L	99.2	
CCV	Q1482400	INORGAN	LEAD	5.00		4.98	mg/L	99.6	
BLA01	Q1482401	NA	LEAD			< 0.00400	mg/L		
BLA02	Q1482124	NA	LEAD			< 0.00400	mg/L		
LCS	Q1482125	SPEX	LEAD	0.5		0.534	mg/L	106.8	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	LEAD	0		BDL	mg/L		
SPI02	Q1482126	A623861	LEAD	0	1	1.05	mg/L	105	
SPI03	Q1482128	A623861	LEAD	0	2	2.01	mg/L	100.5	
DPS03	Q1482129	A623861	LEAD	0	2	2.00	mg/L	100	.5
CCV	Q1482402	INORGAN	LEAD	5.00		5.02	mg/L	100.4	
BLA01	Q1482403	NA	LEAD			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	LEAD	5.00		4.95	mg/L	99	
BLA01	Q1482405	NA	LEAD			< 0.00400	mg/L		
CDL01	Q1482406	PERKIN	LEAD	0.100		0.103	mg/L	103	
ICS-A	Q1482408	PERKIN	LEAD	1.00		0.999	mg/L	99.9	

TCLP MERCURY CVAA SW846-7470A M620.4

Prep: MERCURY CVAA ACID DIGESTION (LEACHATE) SW846-7470A

Run: R450508 Analyst.: D THOMPSON Run Date...: 31-MAR-03
PREP Reviewer: S O'NEAL Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
LCS	Q1482651		R450573
BLA02	Q1482652		R450573
SPI02	Q1482653	A623384	R450573
DPS02	Q1482654	A623384	R450573
SAMPLE	A623858	Rep: 0	R450573
SAMPLE	A623859	Rep: 0	R450573
SAMPLE	A623860	Rep: 0	R450573
SAMPLE	A623861	Rep: 0	R450573
SPI03	Q1482655	A623861	R450573
DPS03	Q1482656	A623861	R450573
SAMPLE	A623862	Rep: 0	R450573

Run: R450573 Analyst.: D DRABENSTOTT Run Date...: 01-APR-03 Instrument: CVAA
ANALYTICAL Reviewer: S O'NEAL Review Date: 01-APR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec
ICV01	Q1483058		MERCURY	0.002		0.00201	mg/L	100.5

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CDL01	Q1483062		MERCURY	0.0002		0.000231	mg/L	115.5	
LCS	Q1482651		MERCURY	0.002		0.00214	mg/L	107	
BLA02	Q1482652		MERCURY			< 0.0002	mg/L		
SPI02	Q1482653	A623384	MERCURY	0	0.001	0.000785	mg/L	78.5	
DPS02	Q1482654	A623384	MERCURY	0	0.001	0.000814	mg/L	81.4	3.6
CCV	Q1483069		MERCURY	0.003		0.00316	mg/L	105.3	
BLA01	Q1483070		MERCURY			< 0.0002	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
CCV	Q1483071		MERCURY	0.003		0.00315	mg/L	105	
BLA01	Q1483072		MERCURY			< 0.0002	mg/L		
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
SPI03	Q1482655	A623861	MERCURY	0	0.002	0.000341	mg/L	17.1	
DPS03	Q1482656	A623861	MERCURY	0	0.002	0.000319	mg/L	16	6.6
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1483073		MERCURY	0.003		0.00316	mg/L	105.3	
BLA01	Q1483074		MERCURY			< 0.0002	mg/L		
CDL01	Q1483077		MERCURY	0.0002		0.000243	mg/L	121.5	

TCLP NICKEL ICP SW846-6010B M622.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	NICKEL	1		1.05	mg/L	105	
CDL01	Q1482351	INORGAN	NICKEL	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	NICKEL	1.00		0.969	mg/L	96.9	
CCV	Q1482400	INORGAN	NICKEL	5.00		5.00	mg/L	100	
BLA01	Q1482401	NA	NICKEL			< 0.00200	mg/L		
BLA02	Q1482124	NA	NICKEL			< 0.00200	mg/L		
LCS	Q1482125	SPEX	NICKEL	0.5		0.528	mg/L	105.6	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	NICKEL	0		BDL	mg/L		
SPI02	Q1482126	A623861	NICKEL	0	1	1.03	mg/L	103	
SPI03	Q1482128	A623861	NICKEL	0	0.2	0.202	mg/L	101	
DPS03	Q1482129	A623861	NICKEL	0	0.2	0.206	mg/L	103	2
CCV	Q1482402	INORGAN	NICKEL	5.00		5.03	mg/L	100.6	

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q1482403	NA	NICKEL			< 0.00200	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	NICKEL	5.00		4.96	mg/L	99.2	
BLA01	Q1482405	NA	NICKEL			< 0.00200	mg/L		
CDL01	Q1482406	PERKIN	NICKEL	0.080		0.0827	mg/L	103.4	
ICS-A	Q1482408	PERKIN	NICKEL	1.00		0.964	mg/L	96.4	

TCLP SELENIUM ICP SW846-6010B M628.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	SELENIUM	1		1.00	mg/L	100	
CDL01	Q1482351	INORGAN	SELENIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	SELENIUM	0.05		0.0507	mg/L	101.4	
CCV	Q1482400	INORGAN	SELENIUM	5		5.02	mg/L	100.4	
BLA01	Q1482401	NA	SELENIUM			0.00656	mg/L		
BLA02	Q1482124	NA	SELENIUM			0.00490	mg/L		
LCS	Q1482125	SPEX	SELENIUM	2		2.13	mg/L	106.5	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	SELENIUM	40.3		38.8	mg/L		3.8
SPI02	Q1482126	A623861	SELENIUM	40.3	4	NQR 45.8	mg/L		
SPI03	Q1482128	A623861	SELENIUM	40.3	1	NQR 41.1	mg/L		
DPS03	Q1482129	A623861	SELENIUM	40.3	1	NQR 41	mg/L		
CCV	Q1482402	INORGAN	SELENIUM	5		5.07	mg/L	101.4	
BLA01	Q1482403	NA	SELENIUM			0.0139	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	SELENIUM	5		4.96	mg/L	99.2	
BLA01	Q1482405	NA	SELENIUM			0.0163	mg/L		
CDL01	Q1482406	PERKIN	SELENIUM	0.01		0.0133	mg/L	133	
ICS-A	Q1482408	PERKIN	SELENIUM	0.05		0.0499	mg/L	99.8	

HERITAGE ENVIRONMENTAL SERVICES, LLC

TCLP SILVER ICP SW846-6010B M630.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482346	PERKIN	SILVER	0.5		0.491	mg/L	98.2	
CDL01	Q1482351	INORGAN	SILVER	2		2.05	mg/L	102.5	
ICS-A	Q1482353	PERKIN	SILVER	0.2		0.220	mg/L	110	
CCV	Q1482400	INORGAN	SILVER	1.00		1.01	mg/L	101	
BLA01	Q1482401	NA	SILVER			< 0.00400	mg/L		
BLA02	Q1482124	NA	SILVER			< 0.00400	mg/L		
LCS	Q1482125	SPEX	SILVER	0.05		0.0593	mg/L	118.6	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
UP02	Q1482127	A623861	SILVER	0		BDL	mg/L		
I02	Q1482126	A623861	SILVER	0	0.1	0.117	mg/L	117	
SPI03	Q1482128	A623861	SILVER	0	0.2	0.200	mg/L	100	
DPS03	Q1482129	A623861	SILVER	0	0.2	0.196	mg/L	98	2
CCV	Q1482402	INORGAN	SILVER	1.00		1.01	mg/L	101	
BLA01	Q1482403	NA	SILVER			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	SILVER	1.00		0.998	mg/L	99.8	
BLA01	Q1482405	NA	SILVER			< 0.00400	mg/L		
CDL01	Q1482406	PERKIN	SILVER	0.020		0.0203	mg/L	101.5	
ICS-A	Q1482408	PERKIN	SILVER	0.2		0.224	mg/L	112	

TCLP THALLIUM ICP SW846-6010B M634.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
I03	Q1482128	A623861	R450473

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Anal Run
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	THALLIUM	1		1.03	mg/L	103	
CDL01	Q1482351	INORGAN	THALLIUM	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	THALLIUM	0.1		0.0951	mg/L	95.1	
CCV	Q1482400	INORGAN	THALLIUM	5		4.78	mg/L	95.6	
BLA01	Q1482401	NA	THALLIUM			0.0292	mg/L		
BLA02	Q1482124	NA	THALLIUM			0.012	mg/L		
LCS	Q1482125	SPEX	THALLIUM	3		3.04	mg/L	101.3	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	THALLIUM	0.0950		BDL	mg/L		200
SPI02	Q1482126	A623861	THALLIUM	0.0950	6	5.79	mg/L	94.9	
SPI03	Q1482128	A623861	THALLIUM	0.0950	2	1.83	mg/L	86.8	
DPS03	Q1482129	A623861	THALLIUM	0.0950	2	1.79	mg/L	84.8	2.3
CCV	Q1482402	INORGAN	THALLIUM	5		4.83	mg/L	96.6	
BLA01	Q1482403	NA	THALLIUM			0.0284	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	THALLIUM	5		4.76	mg/L	95.2	
BLA01	Q1482405	NA	THALLIUM			0.0212	mg/L		
CDL01	Q1482406	PERKIN	THALLIUM	0.02		0.0235	mg/L	117.5	
ICS-A	Q1482408	PERKIN	THALLIUM	0.1		0.0895	mg/L	89.5	

TCLP VANADIUM ICP SW846-6010B M638.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec
ICV01	Q1482345	PERKIN	VANADIUM	1		1.05	mg/L	105

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CDL01	Q1482351	INORGAN	VANADIUM	10		10.5	mg/L	105	
ICS-A	Q1482353	PERKIN	VANADIUM	0.500		0.523	mg/L	104.6	
CCV	Q1482400	INORGAN	VANADIUM	5.00		5.09	mg/L	101.8	
BLA01	Q1482401	NA	VANADIUM			< 0.00400	mg/L		
BLA02	Q1482124	NA	VANADIUM			< 0.00400	mg/L		
LCS	Q1482125	SPEX	VANADIUM	0.5		0.536	mg/L	107.2	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	VANADIUM	0		BDL	mg/L		
SPI02	Q1482126	A623861	VANADIUM	0	1	1.07	mg/L	107	
SPI03	Q1482128	A623861	VANADIUM	0	4	4.07	mg/L	101.8	
DPS03	Q1482129	A623861	VANADIUM	0	4	4.06	mg/L	101.5	.3
CCV	Q1482402	INORGAN	VANADIUM	5.00		5.12	mg/L	102.4	
BLA01	Q1482403	NA	VANADIUM			< 0.00400	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	VANADIUM	5.00		5.05	mg/L	101	
BLA01	Q1482405	NA	VANADIUM			< 0.00400	mg/L		
CDL01	Q1482406	PERKIN	VANADIUM	0.100		0.105	mg/L	105	
ICS-A	Q1482408	PERKIN	VANADIUM	0.500		0.525	mg/L	105	

TCLP ZINC ICP SW846-6010B M639.8

Prep: FAA OR ICP ACID DIGESTION (LEACHATE) SW846-3010A

Run: R450431 Analyst.: L SMITH Run Date...: 28-MAR-03
PREP Reviewer: W WATNESS Review Date: 31-MAR-03

QC Type	Lab ID	Source	Anal Run
BLA02	Q1482124	NA	R450473
LCS	Q1482125	SPEX	R450473
SPI02	Q1482126	A623861	R450473
DUP02	Q1482127	A623861	R450473
SPI03	Q1482128	A623861	R450473
DPS03	Q1482129	A623861	R450473
SAMPLE	A623858	Rep: 0	R450473
SAMPLE	A623859	Rep: 0	R450473
SAMPLE	A623860	Rep: 0	R450473
SAMPLE	A623861	Rep: 0	R450473
SAMPLE	A623862	Rep: 0	R450473

Run: R450473 Analyst.: J KRAMER Run Date...: 28-MAR-03 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSEN Review Date: 31-MAR-03

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q1482345	PERKIN	ZINC	1		1.06	mg/L	106	
CDL01	Q1482351	INORGAN	ZINC	10		10.4	mg/L	104	
ICS-A	Q1482353	PERKIN	ZINC	1.00		0.980	mg/L	98	
CCV	Q1482400	INORGAN	ZINC	5.00		4.99	mg/L	99.8	
BLA01	Q1482401	NA	ZINC			< 0.00800	mg/L		
BLA02	Q1482124	NA	ZINC			0.0116	mg/L		
LCS	Q1482125	SPEX	ZINC	0.5		0.541	mg/L	108.2	
SAMPLE	A623861		See Cert. of Analysis, Rep: 0						
DUP02	Q1482127	A623861	ZINC	0		BDL	mg/L		
SPI02	Q1482126	A623861	ZINC	0	1	1.07	mg/L	107	
SPI03	Q1482128	A623861	ZINC	0	0.2	0.218	mg/L	109	

HERITAGE ENVIRONMENTAL SERVICES, LLC

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
DPS03	Q1482129	A623861	ZINC	0	0.2	0.213	mg/L	106.5	
CCV	Q1482402	INORGAN	ZINC	5.00		5.02	mg/L	100.4	
BLA01	Q1482403	NA	ZINC			< 0.00800	mg/L		
SAMPLE	A623858		See Cert. of Analysis, Rep: 0						
SAMPLE	A623859		See Cert. of Analysis, Rep: 0						
SAMPLE	A623860		See Cert. of Analysis, Rep: 0						
SAMPLE	A623862		See Cert. of Analysis, Rep: 0						
CCV	Q1482404	INORGAN	ZINC	5.00		4.90	mg/L	98	
BLA01	Q1482405	NA	ZINC			< 0.00800	mg/L		
CDL01	Q1482406	PERKIN	ZINC	0.040		0.0417	mg/L	104.3	
ICS-A	Q1482408	PERKIN	ZINC	1.00		0.971	mg/L	97.1	

QC Sample Comments

< Less Than Lower Detection Limit
BDL Below Detection Limit
NQR No QC Result. High Sample Concentration.

Approved by: GA Busch, QAO