

ANALYTICAL REPORT

Job Number: 240-28850-1

Job Description: RVAAP - ECC

For:

Environmental Chemical Corp.
33 Boston Post Road West
Suite 40
Marlborough, MA 01752
Attention: Mr. Jackson Kiker



Approved for release.
Mark J Loeb
Project Manager II
9/30/2013 4:58 PM

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09/30/2013

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CASE NARRATIVE

Client: Environmental Chemical Corp.

Project: RVAAP - ECC

Report Number: 240-28850-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 09/11/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.8 C.

MERCURY

Samples 075SB-0010-0001-SO (240-28850-1), 075SB-0011-0001-SO (240-28850-2) and 075SB-0012-0001-SO (240-28850-3) were analyzed for mercury in accordance with EPA SW-846 Method 7471A DoD. The samples were prepared on 09/23/2013 and analyzed on 09/27/2013.

No difficulties were encountered during the mercury analysis. All quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Samples 075SB-0010-0001-SO (240-28850-1), 075SB-0011-0001-SO (240-28850-2) and 075SB-0012-0001-SO (240-28850-3) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 09/11/2013.

No difficulties were encountered during the % solids analysis. All quality control parameters were within the acceptance limits.

SAMPLE SUMMARY

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-28850-1	075SB-0010-0001-SO	Solid	09/10/2013 1300	09/11/2013 0700
240-28850-2	075SB-0011-0001-SO	Solid	09/10/2013 1315	09/11/2013 0700
240-28850-3	075SB-0012-0001-SO	Solid	09/10/2013 1330	09/11/2013 0700

EXECUTIVE SUMMARY - Detections

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-28850-1	075SB-0010-0001-SO					
Mercury		0.21		0.11	mg/Kg	7471/DOD
Percent Solids		82		0.10	%	Moisture
Percent Moisture		18		0.10	%	Moisture
240-28850-2	075SB-0011-0001-SO					
Mercury		0.22		0.12	mg/Kg	7471/DOD
Percent Solids		86		0.10	%	Moisture
Percent Moisture		14		0.10	%	Moisture
240-28850-3	075SB-0012-0001-SO					
Mercury		0.21		0.11	mg/Kg	7471/DOD
Percent Solids		89		0.10	%	Moisture
Percent Moisture		11		0.10	%	Moisture

METHOD SUMMARY

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Mercury (CVAA)	TAL CAN	SW846 7471/DOD	
Preparation, Mercury	TAL CAN		SW846 7471A
Percent Moisture	TAL CAN	EPA Moisture	

Lab References:

TAL CAN = TestAmerica Canton

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Method	Analyst	Analyst ID
SW846 7471/DOD	Martin, Aaron	AMM2
EPA Moisture	Eikelberry, Nicholas	NJE

Analytical Data

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Client Sample ID: 075SB-0010-0001-SO

Lab Sample ID: 240-28850-1

Date Sampled: 09/10/2013 1300

Client Matrix: Solid

% Moisture: 18.4

Date Received: 09/11/2013 0700

7471/DOD Mercury (CVAA)

Analysis Method: 7471/DOD

Analysis Batch: 240-103298

Instrument ID: H4

Prep Method: 7471A

Prep Batch: 240-102517

Lab File ID: 092713A-HG4.PRN

Dilution: 1.0

Initial Weight/Volume: 0.64 g

Analysis Date: 09/27/2013 1048

Final Weight/Volume: 100 mL

Prep Date: 09/23/2013 1530

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.21		0.016	0.11

Analytical Data

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Client Sample ID: 075SB-0011-0001-SO

Lab Sample ID: 240-28850-2

Date Sampled: 09/10/2013 1315

Client Matrix: Solid

% Moisture: 13.6

Date Received: 09/11/2013 0700

7471/DOD Mercury (CVAA)

Analysis Method: 7471/DOD

Analysis Batch: 240-103298

Instrument ID: H4

Prep Method: 7471A

Prep Batch: 240-102517

Lab File ID: 092713A-HG4.PRN

Dilution: 1.0

Initial Weight/Volume: 0.58 g

Analysis Date: 09/27/2013 1119

Final Weight/Volume: 100 mL

Prep Date: 09/23/2013 1530

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.22		0.017	0.12

Analytical Data

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Client Sample ID: 075SB-0012-0001-SO

Lab Sample ID: 240-28850-3

Date Sampled: 09/10/2013 1330

Client Matrix: Solid

% Moisture: 11.0

Date Received: 09/11/2013 0700

7471/DOD Mercury (CVAA)

Analysis Method: 7471/DOD

Analysis Batch: 240-103298

Instrument ID: H4

Prep Method: 7471A

Prep Batch: 240-102517

Lab File ID: 092713A-HG4.PRN

Dilution: 1.0

Initial Weight/Volume: 0.64 g

Analysis Date: 09/27/2013 1121

Final Weight/Volume: 100 mL

Prep Date: 09/23/2013 1530

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	DL	LOQ
Mercury		0.21		0.015	0.11

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

General Chemistry

Client Sample ID: 075SB-0010-0001-SO

Lab Sample ID: 240-28850-1

Date Sampled: 09/10/2013 1300

Client Matrix: Solid

Date Received: 09/11/2013 0700

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Solids	82		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N
Percent Moisture	18		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

General Chemistry

Client Sample ID: 075SB-0011-0001-SO

Lab Sample ID: 240-28850-2

Date Sampled: 09/10/2013 1315

Client Matrix: Solid

Date Received: 09/11/2013 0700

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Solids	86		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N
Percent Moisture	14		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

General Chemistry

Client Sample ID: 075SB-0012-0001-SO

Lab Sample ID: 240-28850-3

Date Sampled: 09/10/2013 1330

Client Matrix: Solid

Date Received: 09/11/2013 0700

Analyte	Result	Qual	Units	DL	LOQ	Dil	Method
Percent Solids	89		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N
Percent Moisture	11		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 240-101036	Analysis Date: 09/11/2013 1500					DryWt Corrected: N

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Method Blank - Batch: 240-102517

**Method: 7471/DOD
Preparation: 7471A**

Lab Sample ID:	MB 240-102517/1-A	Analysis Batch:	240-103298	Instrument ID:	H4
Client Matrix:	Solid	Prep Batch:	240-102517	Lab File ID:	092713A-HG4.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	09/27/2013 1039	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/23/2013 1530				
Leach Date:	N/A				

Analyte	Result	Qual	DL	LOQ
Mercury	0.033	U	0.014	0.10

Lab Control Sample - Batch: 240-102517

**Method: 7471/DOD
Preparation: 7471A**

Lab Sample ID:	LCS 240-102517/2-A	Analysis Batch:	240-103298	Instrument ID:	H4
Client Matrix:	Solid	Prep Batch:	240-102517	Lab File ID:	092713A-HG4.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	09/27/2013 1041	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/23/2013 1530				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.833	0.874	105	80 - 120	

Matrix Spike - Batch: 240-102517

**Method: 7471/DOD
Preparation: 7471A**

Lab Sample ID:	240-28850-1	Analysis Batch:	240-103298	Instrument ID:	H4
Client Matrix:	Solid	Prep Batch:	240-102517	Lab File ID:	092713A-HG4.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.64 g
Analysis Date:	09/27/2013 1051	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/23/2013 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.21	0.191	0.367	80	80 - 120	

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Duplicate - Batch: 240-102517

Method: 7471/DOD
Preparation: 7471A

Lab Sample ID:	240-28850-1	Analysis Batch:	240-103298	Instrument ID:	H4
Client Matrix:	Solid	Prep Batch:	240-102517	Lab File ID:	092713A-HG4.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.64 g
Analysis Date:	09/27/2013 1050	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/23/2013 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Mercury	0.21	0.252	17	20	

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Duplicate - Batch: 240-101036

Method: Moisture
Preparation: N/A

Lab Sample ID:	240-28850-2	Analysis Batch:	240-101036	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	09/11/2013 1500	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Solids	86	85	2	20	
Percent Moisture	14	15	11	20	

DATA REPORTING QUALIFIERS

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Lab Section	Qualifier	Description
Metals	U	Undetected at the Limit of Detection.

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 240-102517					
LCS 240-102517/2-A	Lab Control Sample	T	Solid	7471A	
MB 240-102517/1-A	Method Blank	T	Solid	7471A	
240-28850-1	075SB-0010-0001-SO	T	Solid	7471A	
240-28850-1DU	Duplicate	T	Solid	7471A	
240-28850-1MS	Matrix Spike	T	Solid	7471A	
240-28850-2	075SB-0011-0001-SO	T	Solid	7471A	
240-28850-3	075SB-0012-0001-SO	T	Solid	7471A	
Analysis Batch:240-103298					
LCS 240-102517/2-A	Lab Control Sample	T	Solid	7471/DOD	240-102517
MB 240-102517/1-A	Method Blank	T	Solid	7471/DOD	240-102517
240-28850-1	075SB-0010-0001-SO	T	Solid	7471/DOD	240-102517
240-28850-1DU	Duplicate	T	Solid	7471/DOD	240-102517
240-28850-1MS	Matrix Spike	T	Solid	7471/DOD	240-102517
240-28850-2	075SB-0011-0001-SO	T	Solid	7471/DOD	240-102517
240-28850-3	075SB-0012-0001-SO	T	Solid	7471/DOD	240-102517
Report Basis					
T = Total					
General Chemistry					
Analysis Batch:240-101036					
240-28850-1	075SB-0010-0001-SO	T	Solid	Moisture	
240-28850-2	075SB-0011-0001-SO	T	Solid	Moisture	
240-28850-2DU	Duplicate	T	Solid	Moisture	
240-28850-3	075SB-0012-0001-SO	T	Solid	Moisture	
Report Basis					
T = Total					

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Laboratory Chronicle

Lab ID: 240-28850-1

Client ID: 075SB-0010-0001-SO

Sample Date/Time: 09/10/2013 13:00

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	240-28850-B-1-A		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	240-28850-B-1-A		240-103298	240-102517	09/27/2013 10:48	1	TAL CAN	AMM2
A:Moisture	240-28850-A-1		240-101036		09/11/2013 15:00	1	TAL CAN	NJE

Lab ID: 240-28850-1 MS

Client ID: 075SB-0010-0001-SO

Sample Date/Time: 09/10/2013 13:00

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	240-28850-B-1-C MS		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	240-28850-B-1-C MS		240-103298	240-102517	09/27/2013 10:51	1	TAL CAN	AMM2

Lab ID: 240-28850-1 DU

Client ID: 075SB-0010-0001-SO

Sample Date/Time: 09/10/2013 13:00

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	240-28850-B-1-B DU		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	240-28850-B-1-B DU		240-103298	240-102517	09/27/2013 10:50	1	TAL CAN	AMM2

Lab ID: 240-28850-2

Client ID: 075SB-0011-0001-SO

Sample Date/Time: 09/10/2013 13:15

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	240-28850-B-2-A		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	240-28850-B-2-A		240-103298	240-102517	09/27/2013 11:19	1	TAL CAN	AMM2
A:Moisture	240-28850-A-2		240-101036		09/11/2013 15:00	1	TAL CAN	NJE

Lab ID: 240-28850-2 DU

Client ID: 075SB-0011-0001-SO

Sample Date/Time: 09/10/2013 13:15

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:Moisture	240-28850-A-2 DU		240-101036		09/11/2013 15:00	1	TAL CAN	NJE

Lab ID: 240-28850-3

Client ID: 075SB-0012-0001-SO

Sample Date/Time: 09/10/2013 13:30

Received Date/Time: 09/11/2013 07:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	240-28850-B-3-A		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	240-28850-B-3-A		240-103298	240-102517	09/27/2013 11:21	1	TAL CAN	AMM2
A:Moisture	240-28850-A-3		240-101036		09/11/2013 15:00	1	TAL CAN	NJE

Quality Control Results

Client: Environmental Chemical Corp.

Job Number: 240-28850-1

Laboratory Chronicle

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	MB 240-102517/1-A		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	MB 240-102517/1-A		240-103298	240-102517	09/27/2013 10:39	1	TAL CAN	AMM2

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7471A	LCS 240-102517/2-A		240-103298	240-102517	09/23/2013 15:30	1	TAL CAN	ADS
A:7471/DOD	LCS 240-102517/2-A		240-103298	240-102517	09/27/2013 10:41	1	TAL CAN	AMM2

Lab References:

TAL CAN = TestAmerica Canton

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Canton

Job No.: 240-28850-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MTAQUAREGIA_00600	09/23/13	09/23/13	NA, Lot NA	400 mL	MTTMHCL_00014	300 mL	Hydrogen Chloride	0.75 mL/mL
.MTTMHCL_00014	09/13/15		Fisher, Lot 4113050		MTTMHNO3_00016	100 mL	Nitric acid	0.25 mL/mL
.MTTMHNO3_00016	03/01/15		Fisher, Lot 1113020		(Purchased Reagent)		Hydrogen Chloride	100 %
					(Purchased Reagent)		Nitric acid	100 %
MTAQUAREGIA_00603	09/26/13	09/26/13	NA, Lot NA	400 mL	MTTMHCL_00014	300 mL	Hydrogen Chloride	0.75 mL/mL
.MTTMHCL_00014	09/13/15		Fisher, Lot 4113050		MTTMHNO3_00016	100 mL	Nitric acid	0.25 mL/mL
.MTTMHNO3_00016	03/01/15		Fisher, Lot 1113020		(Purchased Reagent)		Hydrogen Chloride	100 %
					(Purchased Reagent)		Nitric acid	100 %
MTHGCALW_00468	09/23/13	09/23/13	DIWATER, Lot DIWATER	100 mL	MTHGCAL_00009	1 mL	Mercury	100 ug/L
.MTHGCAL_00009	08/01/14		INORGANIC VENTURES, Lot E2-HG02094		MTTMHNO3_00016	0.15 mL	Nitric acid	1500000 ug/L
.MTTMHNO3_00016	03/01/15		Fisher, Lot 1113020		(Purchased Reagent)		Mercury	10 ug/mL
					(Purchased Reagent)		Nitric acid	100 %
MTHGCALW_00471	09/26/13	09/26/13	DIWATER, Lot DIWATER	100 mL	MTHGCAL_00009	1 mL	Mercury	100 ug/L
.MTHGCAL_00009	08/01/14		INORGANIC VENTURES, Lot E2-HG02094		MTTMHNO3_00016	0.15 mL	Nitric acid	1500000 ug/L
.MTTMHNO3_00016	03/01/15		Fisher, Lot 1113020		(Purchased Reagent)		Mercury	10 ug/mL
					(Purchased Reagent)		Nitric acid	100 %
MTHgStd_00009	03/08/14		Plasma Pure, Lot 1277101		(Purchased Reagent)		Mercury	1 ug/mL
MTKMN04W_00049	07/23/15	07/23/13	DIWATER, Lot DIWATER	2 L	MTKMN04_00014	100 g	Potassium Permanganate	0.05 g/g
.MTKMN04_00014	05/23/18		Fisher, Lot 121666		(Purchased Reagent)		Potassium Permanganate	1 g/g
MTKMN04W_00050	09/26/15	09/26/13	DIWATER, Lot DIWATER	2 L	MTKMN04_00014	100 g	Potassium Permanganate	0.05 g/g
.MTKMN04_00014	05/23/18		Fisher, Lot 121666		(Purchased Reagent)		Potassium Permanganate	1 g/g

1.0 INORGANIC VENTURES is an ISO Guide 34 "General Requirements for the Competence of Reference Material Producers" and ISO 9001 registered manufacturer. Our manufacturing laboratory is accredited to ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories."



2.0 DESCRIPTION OF CRM **10 µg/mL Mercury HNO₃ in 10% (v/v) HNO₃**

Catalog Number: MSHGN-10PPM
 Lot Number: E2-HG02094
 Starting Material: Hg metal
 Starting Material Purity (%): 100.0000
 Starting Material Lot No: R307HGA1
 Matrix: 10% (v/v) HNO₃

*rec'd
6-25-13
SG*

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Concentration: 10.000 ± 0.052 µg/mL

Certified Density: 1.049 g/mL (measured at 20 ± 1°C)

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Certified Value $(\bar{x}) = \frac{\sum x_i}{n}$ $(\bar{x}) = \text{mean}$
 $x_i = \text{individual results}$
 $n = \text{number of measurements}$

Uncertainty $(\pm) = \frac{2 [(\sum s_i)^2]^{1/2}}{(n)^{1/2}}$ $\sum s_i = \text{The summation of all significant estimated errors}$
 (Most common are the errors from instrumental measurement, weighing, dilution to volume and the fixed error reported on the NIST SRM certificate of analysis)

4.0 TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

- "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)
- This product is Traceable to NIST via an unbroken chain of comparisons to the following NIST SRMs:

4.1	ELEMENT	METHOD	NIST SRM#	SRM LOT#
	Hg	ICP Assay	3133	061204
	Hg	EDTA	928	928

4.2 **BALANCE CALIBRATION** - All analytical balances are calibrated yearly by an accredited calibration laboratory and are traceable to a class E 2 analytical weight set with NIST Traceability. All balances are checked daily using an in-house procedure. The weights used for testing are annually compared to master weights and are traceable to the National Institute of Standards and Technology (NIST).

4.3 **THERMOMETER CALIBRATION** - All thermometers are NIST traceable through thermometers that are calibrated by an A2LA accredited calibration laboratory.

4.4 **GLASSWARE CALIBRATION** - An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM's.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP/MS AND ICP-OES IN µg/mL

Standard solutions are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

<u>M</u> Ag < 0.0041260	<u>M</u> Cu < 0.0123790	<u>M</u> La < 0.0010320	<u>M</u> Pr < 0.0006190	<u>M</u> Ta < 0.0144420
<u>O</u> Al < 0.0000900	<u>M</u> Dy < 0.0123790	<u>O</u> Li < 0.0000200	<u>M</u> Pt < 0.0041260	<u>M</u> Tb < 0.0006190
<u>M</u> As < 0.0206320	<u>M</u> Er < 0.0103160	<u>M</u> Lu < 0.0008250	<u>M</u> Rb < 0.0020630	<u>M</u> Te < 0.0618960
<u>M</u> Au < 0.0061900	<u>M</u> Eu < 0.0061900	<u>O</u> Mg < 0.0000300	<u>M</u> Re < 0.0020630	<u>M</u> Th < 0.0020630
<u>M</u> B < 0.1444230	<u>O</u> Fe < 0.0011000	<u>M</u> Mn < 0.0082530	<u>M</u> Rh < 0.0020630	<u>M</u> Ti < 0.1031590
<u>M</u> Ba < 0.0206320	<u>M</u> Ga < 0.0020630	<u>M</u> Mo < 0.0041260	<u>M</u> Ru < 0.0041260	<u>O</u> Tl < 0.0060000
<u>M</u> Be < 0.0010320	<u>M</u> Gd < 0.0020630	<u>O</u> Na 0.0000020	<u>O</u> S < 0.0250000	<u>M</u> Tm < 0.0008250
<u>M</u> Bi < 0.0008250	<u>O</u> Ge < 0.0180000	<u>M</u> Nb < 0.0010320	<u>M</u> Sb < 0.0010320	<u>M</u> U < 0.0041260
<u>O</u> Ca 0.0000020	<u>M</u> Hf < 0.0041260	<u>M</u> Nd < 0.0041260	<u>M</u> Sc < 0.0206320	<u>M</u> V < 0.0041260
<u>O</u> Cd < 0.0046000	<u>s</u> Hg	<u>O</u> Ni < 0.0010000	<u>M</u> Se < 0.0165050	<u>M</u> W < 0.0206320
<u>M</u> Ce < 0.0103160	<u>M</u> Ho < 0.0010320	<u>n</u> Os	<u>O</u> Si < 0.0034000	<u>M</u> Y < 0.0825270
<u>M</u> Co < 0.0061900	<u>M</u> In < 0.0206320	<u>O</u> P < 0.0026000	<u>M</u> Sm < 0.0020630	<u>M</u> Yb < 0.0020630
<u>M</u> Cr < 0.0103160	<u>M</u> Ir < 0.0103160	<u>M</u> Pb < 0.0061900	<u>M</u> Sn < 0.0103160	<u>M</u> Zn < 0.0412640
<u>M</u> Cs < 0.0006190	<u>O</u> K < 0.0020000	<u>O</u> Pd < 0.0038000	<u>M</u> Sr < 0.0010320	<u>M</u> Zr < 0.0103160

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

For the calibration of analytical instruments including but not limited to the following:
HPLC, IC, TLC, ISE, IR, NMR, UV/VIS, MS, Capillary Electrophoresis, Potentiometry, Wet Chemistry and Voltammetry
For the validation of analytical methods
For the preparation of "working reference samples"
For interference studies and the determination of correction coefficients
For detection limit and linearity studies
For additional intended uses, contact Technical Staff

This CRM was manufactured using 18 megohm doubly deionized water that has been filtered through a 0.2 micron filter.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

Storage & Handling - Keep tightly sealed when not in use. Store and use at $20 \pm 4^\circ\text{C}$. Do not pipet from container. Do not return portions removed for pipetting to container.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59; +2; 4 ; Hg(OH)(aq) 1+

Chemical Compatibility - Stable in HNO₃. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water. .

Stability - 2-100 ppb levels not stable in 1% HNO₃ / LDPE container, **stable** in 10% HNO₃ packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO₃ packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO₃ / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO₃); Oxide (Soluble in HNO₃); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Type	Interferences (underlined indicates severe)
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	atom	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	ion	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	atom	Ta, <u>Co</u> , Th ,Rh , Fe, U
ICP-MS 202 amu	9 ppt	n/a	M+	186W16O

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3.0.

8.0 HAZARDOUS INFORMATION - Please refer to the enclosed Material Safety Data sheet for information regarding this CRM.

9.0 HOMOGENEITY - This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- SAI Global File Number 010105

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration"

- Chemical Testing - Accredited A2LA Certificate Number 883.01

10.3 ISO/IEC Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Materials Production - Accredited A2LA Certificate Number 883.02

10.4 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.5 10CFR21 - Nuclear Regulatory Commission

- Reporting Defects and Non-Compliance

11.0 DATE OF CERTIFICATION AND PERIOD OF VALIDITY

11.1 Shelf Life - The period of time during which the concentration of the analyte(s) in a properly packaged, unopened, and unused standard stored under environmentally controlled and monitored conditions will remain within the specified uncertainty range. Shelf life is limited primarily by transpiration (loss of water from the solution) and infrequently, by chemical instability.

11.2 Expiration Date - The date after which a CRM should not be used. Routine laboratory use of a CRM increases transpiration losses and the chance of contamination which affect the integrity of the CRM and limit its useful life. Manufacturer concurs with state and federal regulatory agencies' recommendations that solution standards be assigned a one-year expiration date.

11.3 Chemical Stability - Studies have been conducted on this or similar CRMs and it has been demonstrated that this CRM is chemically stable for a period of not less than two years provided the "Storage & Handling" conditions are followed that are described in section 7.0.

Certification Date: January 27, 2012

Expiration Date:

EXPIRES
01 27 2014

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By: Danny Feeny
Product Documentation Technician



Certificate Approved By: Brian Alexander
PhD., Technical Process Director



Certifying Officer: Paul Gaines
PhD., Senior Technical Director



PLASMA-PURE™

Standard Certificate

Catalog Number: 610-0000

Lot Number: 1287101

Starting Material: 99.9999% purity Hg metal

Diluent/Matrix: 2% HCl

Preparation Date: Mar-13

Expiration Date: Mar-14

Element

Concentration

Hg

1.00 ± 0.02 µg/ml

Received 3/8/2013
ADS

Residual Impurities *

Concentration

None Detected

* Impurities were determined via ICP Emission Spectroscopy. Only elements detected are reported.

Traceability

1. This standard is certified using wet chemistry assay procedures and/or plasma emission spectroscopy, traceable to primary or well-characterized secondary standards. Traceable to: NIST SRM 3133, Hg
Lot#991304
2. Analytical balances are routinely calibrated using NIST weight sets.

Certification

Leeman Labs, Inc. certifies that PLASMA-PURE Standards have been formulated to the concentrations listed above (±0.5% of reported value). This certification does not apply and will be considered null and void if PLASMA-PURE Standards are used in a manner or in an environment not consistent with their intended purpose or are modified by the Customer in any manner.

Limitations

THE ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability

In no event shall Leeman Labs, Inc. be liable for any indirect, incidental, special, or consequential damages, including loss of profits, revenue, or used incurred by Customer or any third party, whether in an action in contract or tort. Leeman Labs Inc's liability for damages hereunder shall in no event exceed the amounts paid for the PLASMA-PURE Standards.

QC Analyst:

Date: March 5, 2013



TELEDYNE Leeman Labs

A Teledyne Technologies Company
6 Wentworth Drive . Hudson, NH 03051
Tel: 603.886.8400 Fax: 603.886.9141

Certification Summary

Client: Environmental Chemical Corp.
Project/Site: RVAAP - ECC

TestAmerica Job ID: 240-28850-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Canton	California	NELAP	9	01144CA
TestAmerica Canton	Connecticut	State Program	1	PH-0590
TestAmerica Canton	Florida	NELAP	4	E87225
TestAmerica Canton	Georgia	State Program	4	N/A
TestAmerica Canton	Illinois	NELAP	5	200004
TestAmerica Canton	Kansas	NELAP	7	E-10336
TestAmerica Canton	Kentucky	State Program	4	58
TestAmerica Canton	L-A-B	DoD ELAP		L2315
TestAmerica Canton	Minnesota	NELAP	5	039-999-348
TestAmerica Canton	Nevada	State Program	9	OH-000482008A
TestAmerica Canton	New Jersey	NELAP	2	OH001
TestAmerica Canton	New York	NELAP	2	10975
TestAmerica Canton	Ohio VAP	State Program	5	CL0024
TestAmerica Canton	Pennsylvania	NELAP	3	68-00340
TestAmerica Canton	Texas	NELAP	6	
TestAmerica Canton	USDA	Federal		P330-11-00328
TestAmerica Canton	Virginia	NELAP	3	460175
TestAmerica Canton	Washington	State Program	10	C971
TestAmerica Canton	Wisconsin	State Program	5	999518190

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Canton Job Number: 240-28850-1

SDG No.: _____

Project: RVAAP - ECC

Client Sample ID	Lab Sample ID
<u>075SB-0010-0001-SO</u>	<u>240-28850-1</u>
<u>075SB-0011-0001-SO</u>	<u>240-28850-2</u>
<u>075SB-0012-0001-SO</u>	<u>240-28850-3</u>

Comments:

1A-IN
 INORGANIC ANALYSIS DATA SHEET
 METALS

Client Sample ID: 075SB-0010-0001-SO

Lab Sample ID: 240-28850-1

Lab Name: TestAmerica Canton

Job No.: 240-28850-1

SDG ID.:

Matrix: Solid

Date Sampled: 09/10/2013 13:00

Reporting Basis: DRY

Date Received: 09/11/2013 07:00

% Solids: 81.6

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Mercury	0.21	0.11	0.038	0.016	mg/Kg			1	7471/DOD

1A-IN
 INORGANIC ANALYSIS DATA SHEET
 METALS

Client Sample ID: 075SB-0011-0001-SO

Lab Sample ID: 240-28850-2

Lab Name: TestAmerica Canton

Job No.: 240-28850-1

SDG ID.:

Matrix: Solid

Date Sampled: 09/10/2013 13:15

Reporting Basis: DRY

Date Received: 09/11/2013 07:00

% Solids: 86.4

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Mercury	0.22	0.12	0.040	0.017	mg/Kg			1	7471/DOD

1A-IN
 INORGANIC ANALYSIS DATA SHEET
 METALS

Client Sample ID: 075SB-0012-0001-SO Lab Sample ID: 240-28850-3
 Lab Name: TestAmerica Canton Job No.: 240-28850-1
 SDG ID.: _____
 Matrix: Solid Date Sampled: 09/10/2013 13:30
 Reporting Basis: DRY Date Received: 09/11/2013 07:00
 % Solids: 89.0

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Mercury	0.21	0.11	0.035	0.015	mg/Kg			1	7471/DOD

2A-IN
 CALIBRATION VERIFICATIONS
 METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

ICV Source: MTHgStd_00009 Concentration Units: ug/L

CCV Source: MTHGCALW_00471

Analyte	ICV 240-103300/8-A 09/27/2013 07:18				CCV 240-103300/11-A 09/27/2013 10:16				CCV 240-103300/11-A 09/27/2013 10:43			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.78		5.00	96	10.0		10.0	100	10.2		10.0	102

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
 Italicized analytes were not requested for this sequence.

2A-IN
 CALIBRATION VERIFICATIONS
 METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

ICV Source: MTHgStd_00009 Concentration Units: ug/L

CCV Source: MTHGCALW_00471

Analyte	CCV 240-103300/11-A 09/27/2013 11:08				CCV 240-103300/11-A 09/27/2013 11:28							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	10.5		10.0	105	10.5		10.0	105				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
 Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Method: 7471/DOD Instrument ID: H4

Lab Sample ID: CRA 240-103300/10-A Concentration Units: ug/L

CRQL Check Standard Source: MTHGCALW_00471

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Mercury	0.200	0.211		105	

Lab Sample ID: CRA 240-103300/10-A Concentration Units: ug/L

CRQL Check Standard Source: MTHGCALW_00471

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Mercury	0.200	0.236		118	

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 240-103300/9-A 09/27/2013 07:20		CCB 240-103300/12-A 09/27/2013 10:18		CCB 240-103300/12-A 09/27/2013 10:45		CCB 240-103300/12-A 09/27/2013 11:10	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U	0.20	U	0.20	U	0.20	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	CCB 240-103300/12-A 09/27/2013 11:31							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.20	U						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Concentration Units: mg/Kg Lab Sample ID: MB 240-102517/1-A

Instrument Code: H4 Batch No.: 103298

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.033	U		7471_DOD

5A-IN
 MATRIX SPIKE SAMPLE RECOVERY
 METALS

Client ID: 075SB-0010-0001-SO MS Lab ID: 240-28850-1 MS
 Lab Name: TestAmerica Canton Job No.: 240-28850-1
 SDG No.: _____
 Matrix: Solid Concentration Units: mg/Kg
 % Solids: 81.6

Analyte	SSR C	Sample Result (SR) C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Mercury	0.367	0.21	0.191	80	80-120		7471/DOD

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Note - Results and Reporting Limits have been adjusted for dry weight.

6-IN
 DUPLICATES
 METALS

Client ID: 075SB-0010-0001-SO DU

Lab ID: 240-28850-1 DU

Lab Name: TestAmerica Canton

Job No.: 240-28850-1

SDG No.: _____

% Solids for Sample: 81.6

% Solids for Duplicate: 81.6

Matrix: Solid

Concentration Units: mg/Kg

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	Method
Mercury	0.11	0.21	0.252	17		7471/DOD

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

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 240-102517/2-A

Lab Name: TestAmerica Canton

Job No.: 240-28850-1

Sample Matrix: Solid

LCS Source: MTHGCALW_00468

Analyte	Solid(mg/Kg)						
	True	Found	C	%R	Limits	Q	Method
Mercury	0.833	0.874		105	80 120		7471/DOD

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

FORM VIIA - IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Canton Job Number: 240-28850-1
SDG Number: _____
Matrix: Solid Instrument ID: H4
Method: 7471/DOD DL Date: 02/16/2010 09:46
Prep Method: 7471A

Analyte	Wavelength/ Mass	LOQ (mg/Kg)	DL (mg/Kg)
Mercury	253.7	0.1	0.014

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Canton Job Number: 240-28850-1
SDG Number: _____
Matrix: Solid Instrument ID: H4
Method: 7471/DOD XMDL Date: 02/16/2010 09:47

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury	253.7	0.2	0.12

11-IN
LINEAR RANGES
METALS

Lab Name: TestAmerica Canton

Job No: 240-28850-1

SDG No.: _____

Instrument ID: H4

Date: 04/01/2011 10:50

Analyte	Integ. Time (Sec.)	Concentration (ppb)	Method
Mercury		50	7471/DOD

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Prep Method: 7471A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 240-102517/1-A	09/23/2013 15:30	102517	0.60		100
LCS 240-102517/2-A	09/23/2013 15:30	102517	0.60		100
240-28850-1	09/23/2013 15:30	102517	0.64		100
240-28850-1 DU	09/23/2013 15:30	102517	0.64		100
240-28850-1 MS	09/23/2013 15:30	102517	0.64		100
240-28850-3	09/23/2013 15:30	102517	0.64		100
240-28850-2	09/23/2013 15:30	102517	0.58		100

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Instrument ID: H4 Method: 7471/DOD

Start Date: 09/27/2013 06:48 End Date: 09/27/2013 14:31

Lab Sample ID	D / F	Type	Time	Analytes															
				Hg															
IC 240-103300/1-A			06:48	X															
IC 240-103300/1-A			06:50	X															
IC 240-103300/2-A			06:52	X															
IC 240-103300/2-A			06:54	X															
IC 240-103300/3-A			06:56	X															
IC 240-103300/3-A			06:58	X															
IC 240-103300/4-A			07:00	X															
IC 240-103300/4-A			07:02	X															
IC 240-103300/5-A			07:04	X															
IC 240-103300/5-A			07:07	X															
IC 240-103300/6-A			07:09	X															
IC 240-103300/6-A			07:11	X															
IC 240-103300/7-A			07:13	X															
IC 240-103300/7-A			07:15	X															
ICV 240-103300/8-A	1		07:18	X															
ICB 240-103300/9-A	1		07:20	X															
CRA 240-103300/10-A	1		07:22	X															
CCV 240-103300/11-A			07:33																
CCB 240-103300/12-A			07:35																
ZZZZZZ			07:37																
ZZZZZZ			07:39																
ZZZZZZ			07:41																
ZZZZZZ			07:43																
ZZZZZZ			07:47																
ZZZZZZ			07:49																
ZZZZZZ			07:51																
ZZZZZZ			07:53																
ZZZZZZ			07:55																
ZZZZZZ			07:57																
CCV 240-103300/11-A			08:01																
CCB 240-103300/12-A			08:03																
ZZZZZZ			08:05																
ZZZZZZ			08:07																
ZZZZZZ			08:10																
ZZZZZZ			08:12																
ZZZZZZ			08:14																
ZZZZZZ			08:16																
ZZZZZZ			08:18																
ZZZZZZ			08:20																
ZZZZZZ			08:24																
ZZZZZZ			08:26																
CCV 240-103300/11-A			08:30																

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Instrument ID: H4 Method: 7471/DOD

Start Date: 09/27/2013 06:48 End Date: 09/27/2013 14:31

Lab Sample ID	D / F	Type	Time	Analytes															
				H	g														
CCB 240-103300/12-A			08:32																
ZZZZZZ			08:34																
ZZZZZZ			08:36																
ZZZZZZ			08:38																
ZZZZZZ			08:40																
ZZZZZZ			08:42																
ZZZZZZ			08:45																
ZZZZZZ			08:47																
ZZZZZZ			08:49																
ZZZZZZ			08:51																
ZZZZZZ			08:53																
CCV 240-103300/11-A			08:55																
CCB 240-103300/12-A			08:57																
ZZZZZZ			09:01																
ZZZZZZ			09:03																
ZZZZZZ			09:06																
ZZZZZZ			09:08																
ZZZZZZ			09:10																
ZZZZZZ			09:12																
ZZZZZZ			09:14																
ZZZZZZ			09:16																
ZZZZZZ			09:19																
ZZZZZZ			09:21																
CCV 240-103300/11-A			09:23																
CCB 240-103300/12-A			09:25																
ZZZZZZ			09:28																
ZZZZZZ			09:30																
ZZZZZZ			09:32																
ZZZZZZ			09:35																
ZZZZZZ			09:37																
ZZZZZZ			09:39																
ZZZZZZ			09:41																
ZZZZZZ			09:43																
ZZZZZZ			09:45																
ZZZZZZ			09:47																
CCV 240-103300/11-A			09:50																
CCB 240-103300/12-A			09:52																
ZZZZZZ			09:54																
ZZZZZZ			09:56																
ZZZZZZ			09:59																
ZZZZZZ			10:01																
ZZZZZZ			10:03																

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Instrument ID: H4 Method: 7471/DOD

Start Date: 09/27/2013 06:48 End Date: 09/27/2013 14:31

Lab Sample ID	D / F	T y p e	Time	Analytes															
				H															
ZZZZZZ			10:05																
ZZZZZZ			10:08																
ZZZZZZ			10:10																
ZZZZZZ			10:12																
ZZZZZZ			10:14																
CCV 240-103300/11-A	1		10:16	X															
CCB 240-103300/12-A	1		10:18	X															
ZZZZZZ			10:20																
ZZZZZZ			10:23																
ZZZZZZ			10:25																
ZZZZZZ			10:27																
ZZZZZZ			10:29																
ZZZZZZ			10:32																
ZZZZZZ			10:34																
ZZZZZZ			10:37																
MB 240-102517/1-A	1	T	10:39	X															
LCS 240-102517/2-A	1	T	10:41	X															
CCV 240-103300/11-A	1		10:43	X															
CCB 240-103300/12-A	1		10:45	X															
240-28850-1	1	T	10:48	X															
240-28850-1 DU	1	T	10:50	X															
240-28850-1 MS	1	T	10:51	X															
ZZZZZZ			10:54																
ZZZZZZ			10:55																
ZZZZZZ			10:57																
ZZZZZZ			11:00																
ZZZZZZ			11:02																
ZZZZZZ			11:03																
ZZZZZZ			11:06																
CCV 240-103300/11-A	1		11:08	X															
CCB 240-103300/12-A	1		11:10	X															
ZZZZZZ			11:12																
ZZZZZZ			11:14																
ZZZZZZ			11:16																
240-28850-2	1	T	11:19	X															
240-28850-3	1	T	11:21	X															
CRA 240-103300/10-A	1		11:24	X															
CCV 240-103300/11-A	1		11:28	X															
CCB 240-103300/12-A	1		11:31	X															
CCV 240-103300/11-A			13:21																
CCB 240-103300/12-A			13:23																
ZZZZZZ			13:25																

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

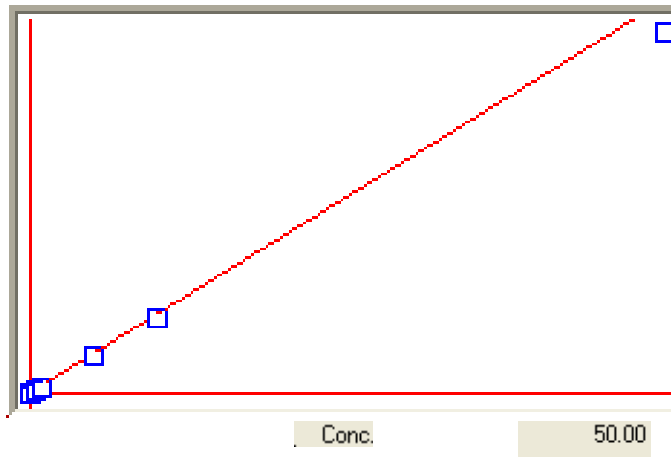
Instrument ID: H4 Method: 7471/DOD

Start Date: 09/27/2013 06:48 End Date: 09/27/2013 14:31

Lab Sample ID	D / F	Type	Time	Analytes															
				H	g														
ZZZZZZ			13:27																
ZZZZZZ			13:30																
ZZZZZZ			13:33																
ZZZZZZ			13:35																
ZZZZZZ			13:38																
ZZZZZZ			13:40																
ZZZZZZ			13:42																
CCV 240-103300/11-A			13:44																
CCB 240-103300/12-A			13:46																
CCV 240-103300/11-A			14:16																
CCB 240-103300/12-A			14:18																
ZZZZZZ			14:20																
ZZZZZZ			14:22																
ZZZZZZ			14:25																
ZZZZZZ			14:27																
CCV 240-103300/11-A			14:29																
CCB 240-103300/12-A			14:31																

Prep Types
T = Total/NA

Wt. In. ▾



Calibrated

A

Accepted

B 2.54573e-4

C -1.33989e-2

Rhc .998602

Accepted Date: 27-Sep-13 07:16

S	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
01	.00000	-.0120	-.0120	5	14	-4	15			
02	.20000	.2106	.0106	881	4.34%	853	907			
03	.50000	.5301	.0301	2135	2.12%	2103	2167			
04	1.0000	1.048	.0477	4169	0.75%	4146	4190			
05	5.0000	4.830	-.1700	19026	1.29%	19199	18852			
06	10.000	9.835	-.1651	38685	0.92%	38936	38435			
07	50.000	45.94	-4.064	180497	1.42%	182314	178680			
08										
09										
10										

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard:	1	Rep: 1		Seq: 1		06:48:06	27 Sep 13	HG
Hg	.0000	ppb	-4					
*** Standard:	1	Rep: 2		Seq: 2		06:50:30	27 Sep 13	HG
Hg	.0000	ppb	15					
*** Standard:	2	Rep: 1		Seq: 3		06:52:22	27 Sep 13	HG
Hg	.2000	ppb	853					
*** Standard:	2	Rep: 2		Seq: 4		06:54:16	27 Sep 13	HG
Hg	.2000	ppb	907					
*** Standard:	3	Rep: 1		Seq: 5		06:56:40	27 Sep 13	HG
Hg	.5000	ppb	2103					
*** Standard:	3	Rep: 2		Seq: 6		06:58:32	27 Sep 13	HG
Hg	.5000	ppb	2167					
*** Standard:	4	Rep: 1		Seq: 7		07:00:38	27 Sep 13	HG
Hg	1.000	ppb	4146					
*** Standard:	4	Rep: 2		Seq: 8		07:02:41	27 Sep 13	HG
Hg	1.000	ppb	4190					
*** Standard:	5	Rep: 1		Seq: 9		07:04:54	27 Sep 13	HG
Hg	5.000	ppb	19199					
*** Standard:	5	Rep: 2		Seq: 10		07:07:07	27 Sep 13	HG
Hg	5.000	ppb	18852					
*** Standard:	6	Rep: 1		Seq: 11		07:09:12	27 Sep 13	HG
Hg	10.00	ppb	38936					
*** Standard:	6	Rep: 2		Seq: 12		07:11:16	27 Sep 13	HG
Hg	10.00	ppb	38435					
*** Standard:	7	Rep: 1		Seq: 13		07:13:39	27 Sep 13	HG
Hg	50.00	ppb	182314					
*** Standard:	7	Rep: 2		Seq: 14		07:15:46	27 Sep 13	HG
Hg	50.00	ppb	178680					
*** Check Standard:	2	Ck2ICV		Seq: 15		07:18:00	27 Sep 13	HG
Line Flag %Rcv. Found True Units SD/RSD								
Hg		95.51	4.776	5.000	ppb	.0000		
*** Check Standard:	3	Ck3ICB		Seq: 16		07:20:24	27 Sep 13	HG
Line Flag %Rcv. Found True Units SD/RSD								
Hg		^^^^^^	-.0478	.0000	ppb	.0000		

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Check Standard: 4 Ck4CRA\MRL Seq: 17 07:22:30 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		105.4	.2109	.2000	ppb	.0000		
*** Check Standard: 6 Ck6CCV Seq: 18 07:33:17 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		98.03	9.803	10.00	ppb	.0000		
*** Check Standard: 1 Ck1CCB Seq: 19 07:35:47 27 Sep 13 HG								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.0254	.6000	ppb	.0000			
*** Sample ID: Seq: 20 07:37:39 27 Sep 13 HG								
			mb 240-102898/1-a					
Hg	-.0233	ppb	.0000	-.0233				
*** Sample ID: Seq: 21 07:39:30 27 Sep 13 HG								
			lcs 240-102898/2-a					
Hg	4.767	ppb	.0000	4.767				
*** Sample ID: Seq: 22 07:41:36 27 Sep 13 HG								
			240-29419-d-1-a					
Hg	.5449	ppb	.0000	.5449				
*** Sample ID: Seq: 23 07:43:39 27 Sep 13 HG								
			240-29419-d-1-b ms					
Hg	1.341	ppb	.0000	1.341				
*** Sample ID: Seq: 24 07:47:10 27 Sep 13 HG								
			240-29419-d-1-c msd					
Hg	1.455	ppb	.0000	1.455				
*** Sample ID: Seq: 25 07:49:15 27 Sep 13 HG								
			240-29419-d-2-a					
Hg	1.065	ppb	.0000	1.065				
*** Sample ID: Seq: 26 07:51:07 27 Sep 13 HG								
			240-29419-d-3-a					
Hg	.7855	ppb	.0000	.7855				
*** Sample ID: Seq: 27 07:53:25 27 Sep 13 HG								
			240-29420-d-1-a					
Hg	3.717	ppb	.0000	3.717				
*** Sample ID: Seq: 28 07:55:38 27 Sep 13 HG								
			240-29420-d-2-a					
Hg	1.533	ppb	.0000	1.533				
*** Sample ID: Seq: 29 07:57:32 27 Sep 13 HG								
			240-29420-d-3-a					
Hg	.1971	ppb	.0000	.1971				
*** Check Standard: 6 Ck6CCV Seq: 30 08:01:23 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		94.59	9.459	10.00	ppb	.0000		
*** Check Standard: 1 Ck1CCB Seq: 31 08:03:54 27 Sep 13 HG								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1076	.6000	ppb	.0000			
*** Sample ID: Seq: 32 08:05:46 27 Sep 13 HG								
			240-29420-d-4-a					
Hg	2.590	ppb	.0000	2.590				

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID:					Seq: 33	08:07:48	27 Sep 13	HG
				240-29420-d-5-a				
Hg	5.205	ppb	.0000	5.205				
*** Sample ID:					Seq: 34	08:10:04	27 Sep 13	HG
				240-29420-d-6-a				
Hg	.0788	ppb	.0000	.0788				
*** Sample ID:					Seq: 35	08:12:00	27 Sep 13	HG
				240-29420-d-7-a				
Hg	2.258	ppb	.0000	2.258				
*** Sample ID:					Seq: 36	08:14:14	27 Sep 13	HG
				240-29420-d-8-a				
Hg	1.929	ppb	.0000	1.929				
*** Sample ID:					Seq: 37	08:16:40	27 Sep 13	HG
				240-29420-d-9-a				
Hg	2.248	ppb	.0000	2.248				
*** Sample ID:					Seq: 38	08:18:36	27 Sep 13	HG
				240-29420-d-10-a				
Hg	1.689	ppb	.0000	1.689				
*** Sample ID:					Seq: 39	08:20:53	27 Sep 13	HG
				240-29420-d-11-a				
Hg	2.083	ppb	.0000	2.083				
*** Sample ID:					Seq: 40	08:24:07	27 Sep 13	HG
				240-29420-d-12-a				
Hg	3.731	ppb	.0000	3.731				
*** Sample ID:					Seq: 41	08:26:50	27 Sep 13	HG
				mb 240-103041/1-a				
Hg	-.0694	ppb	.0000	-.0694				
*** Check Standard: 6	Ck6CCV				Seq: 42	08:30:23	27 Sep 13	HG
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		99.15	9.915	10.00	ppb	.0000		
*** Check Standard: 1	Ck1CCB				Seq: 43	08:32:29	27 Sep 13	HG
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1641	.6000	ppb	.0000			
*** Sample ID:					Seq: 44	08:34:41	27 Sep 13	HG
				lcs 240-103041/2-a				
Hg	4.826	ppb	.0000	4.826				
*** Sample ID:					Seq: 45	08:36:39	27 Sep 13	HG
				180-24816-c-19-a				
Hg	1.913	ppb	.0000	1.913				
*** Sample ID:					Seq: 46	08:38:31	27 Sep 13	HG
				180-24816-c-19-b ms				
Hg	1.797	ppb	.0000	1.797				
*** Sample ID:					Seq: 47	08:40:52	27 Sep 13	HG
				180-24816-c-19-c msd				
Hg	2.587	ppb	.0000	2.587				
*** Sample ID:					Seq: 48	08:42:46	27 Sep 13	HG
				180-24811-c-2-b				
Hg	.7167	ppb	.0000	.7167				

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID:					Seq: 49	08:45:14	27 Sep 13	HG
				180-24816-c-21-a				
Hg	1.336	ppb	.0000	1.336				
*** Sample ID:					Seq: 50	08:47:18	27 Sep 13	HG
				180-24816-c-22-a				
Hg	2.096	ppb	.0000	2.096				
*** Sample ID:					Seq: 51	08:49:21	27 Sep 13	HG
				180-24816-c-23-a				
Hg	1.203	ppb	.0000	1.203				
*** Sample ID:					Seq: 52	08:51:15	27 Sep 13	HG
				180-24816-c-24-a				
Hg	2.705	ppb	.0000	2.705				
*** Sample ID:					Seq: 53	08:53:22	27 Sep 13	HG
				180-24816-c-25-a				
Hg	1.507	ppb	.0000	1.507				
*** Check Standard: 6	Ck6CCV				Seq: 54	08:55:17	27 Sep 13	HG
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		96.94	9.694	10.00	ppb	.0000		
*** Check Standard: 1	Ck1CCB				Seq: 55	08:57:52	27 Sep 13	HG
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.0587	.6000	ppb	.0000			
*** Sample ID:					Seq: 56	09:01:03	27 Sep 13	HG
				180-24816-c-26-a				
Hg	2.245	ppb	.0000	2.245				
*** Sample ID:					Seq: 57	09:03:29	27 Sep 13	HG
				180-24816-c-27-a				
Hg	2.714	ppb	.0000	2.714				
*** Sample ID:					Seq: 58	09:06:03	27 Sep 13	HG
				180-24816-c-28-a				
Hg	4.009	ppb	.0000	4.009				
*** Sample ID:					Seq: 59	09:08:29	27 Sep 13	HG
				180-24816-c-29-a				
Hg	2.985	ppb	.0000	2.985				
*** Sample ID:					Seq: 60	09:10:31	27 Sep 13	HG
				180-24816-c-30-a				
Hg	7.305	ppb	.0000	7.305				
*** Sample ID:					Seq: 61	09:12:47	27 Sep 13	HG
				180-24816-c-31-a				
Hg	2.635	ppb	.0000	2.635				
*** Sample ID:					Seq: 62	09:14:42	27 Sep 13	HG
				180-24816-c-32-a				
Hg	1.659	ppb	.0000	1.659				
*** Sample ID:					Seq: 63	09:16:44	27 Sep 13	HG
				180-24816-c-33-a				
Hg	3.512	ppb	.0000	3.512				
*** Sample ID:					Seq: 64	09:19:00	27 Sep 13	HG
				180-24816-c-34-a				
Hg	2.769	ppb	.0000	2.769				

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 180-24816-c-35-a								
Hg	2.209	ppb	.0000	2.209				
Seq: 65 09:21:28 27 Sep 13 HG								
*** Check Standard: 6 Ck6CCV								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		99.18	9.918	10.00	ppb	.0000		
Seq: 66 09:23:31 27 Sep 13 HG								
*** Check Standard: 1 Ck1CCB								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1590	.6000	ppb	.0000			
Seq: 67 09:25:32 27 Sep 13 HG								
*** Sample ID: 180-24816-c-36-a								
Hg	1.681	ppb	.0000	1.681				
Seq: 68 09:28:28 27 Sep 13 HG								
*** Sample ID: 180-24816-c-37-a								
Hg	2.526	ppb	.0000	2.526				
Seq: 69 09:30:31 27 Sep 13 HG								
*** Sample ID: 180-24816-c-38-a								
Hg	2.420	ppb	.0000	2.420				
Seq: 70 09:32:44 27 Sep 13 HG								
*** Sample ID: 240-29200-a-33-a@10								
Hg	6.222	ppb	.0000	6.222				
Seq: 71 09:35:06 27 Sep 13 HG								
*** Sample ID: mb 240-102307/1-a								
Hg	-.0345	ppb	.0000	-.0345				
Seq: 72 09:37:39 27 Sep 13 HG								
*** Sample ID: lcs 240-102307/2-a								
Hg	5.163	ppb	.0000	5.163				
Seq: 73 09:39:32 27 Sep 13 HG								
*** Sample ID: 240-29200-a-2-a@10								
Hg	1.784	ppb	.0000	1.784				
Seq: 74 09:41:26 27 Sep 13 HG								
*** Sample ID: 240-29200-a-2b ms@10								
Hg	1.376	ppb	.0000	1.376				
Seq: 75 09:43:29 27 Sep 13 HG								
*** Sample ID: 240-29200-a2c msd@10								
Hg	1.461	ppb	.0000	1.461				
Seq: 76 09:45:35 27 Sep 13 HG								
*** Sample ID: 240-29200-a-1-a@10								
Hg	12.91	ppb	.0000	12.91				
Seq: 77 09:47:49 27 Sep 13 HG								
*** Check Standard: 6 Ck6CCV								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		101.4	10.14	10.00	ppb	.0000		
Seq: 78 09:50:04 27 Sep 13 HG								
*** Check Standard: 1 Ck1CCB								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.0865	.6000	ppb	.0000			
Seq: 79 09:52:16 27 Sep 13 HG								
*** Sample ID: 240-29200-a-3-a								
Hg	74.12 H	ppb	.0000	74.12				
Seq: 80 09:54:08 27 Sep 13 HG								

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID:					Seq: 81	09:56:35	27	Sep 13	HG
					240-29200-a-4-a				
Hg	2.838	ppb	.0000	2.838					
*** Sample ID:					Seq: 82	09:59:17	27	Sep 13	HG
					240-29200-a-5-a@10				
Hg	6.667	ppb	.0000	6.667					
*** Sample ID:					Seq: 83	10:01:12	27	Sep 13	HG
					240-29200-a-6-a				
Hg	4.494	ppb	.0000	4.494					
*** Sample ID:					Seq: 84	10:03:47	27	Sep 13	HG
					240-29200-a-7-a@10				
Hg	6.791	ppb	.0000	6.791					
*** Sample ID:					Seq: 85	10:05:45	27	Sep 13	HG
					240-29200-a-8-a				
Hg	1.155	ppb	.0000	1.155					
*** Sample ID:					Seq: 86	10:08:08	27	Sep 13	HG
					240-29200-a-9-a@10				
Hg	.6757	ppb	.0000	.6757					
*** Sample ID:					Seq: 87	10:10:15	27	Sep 13	HG
					240-29200-a-10-a				
Hg	5.659	ppb	.0000	5.659					
*** Sample ID:					Seq: 88	10:12:12	27	Sep 13	HG
					240-29200-a-11-a				
Hg	34.24	ppb	.0000	34.24					
*** Sample ID:					Seq: 89	10:14:49	27	Sep 13	HG
					240-29200-a-12-a				
Hg	9.344	ppb	.0000	9.344					
*** Check Standard: 6	Ck6CCV				Seq: 90	10:16:53	27	Sep 13	HG
Line	Flag	%Rcv.	Found	True	Units	SD/RSD			
Hg		100.1	10.01	10.00	ppb	.0000			
*** Check Standard: 1	Ck1CCB				Seq: 91	10:18:49	27	Sep 13	HG
Line	Flag	Found	Range(+/-)	Units	SD/RSD				
Hg		-.2056	.6000	ppb	.0000				
*** Sample ID:					Seq: 92	10:20:42	27	Sep 13	HG
					240-29200-a-13-a				
Hg	51.34	H ppb	.0000	51.34					
*** Sample ID:					Seq: 93	10:23:06	27	Sep 13	HG
					240-29200-a-14-a				
Hg	2.035	ppb	.0000	2.035					
*** Sample ID:					Seq: 94	10:25:02	27	Sep 13	HG
					240-29200-a-15-a				
Hg	56.59	H ppb	.0000	56.59					
*** Sample ID:					Seq: 95	10:27:17	27	Sep 13	HG
					240-29200-a-16-a				
Hg	26.51	ppb	.0000	26.51					
*** Sample ID:					Seq: 96	10:29:26	27	Sep 13	HG
					240-29200-a-17-a				
Hg	57.06	H ppb	.0000	57.06					

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID:					Seq: 97	10:32:11	27 Sep 13	HG
					240-29200-a-18-a			
Hg	7.116	ppb	.0000	7.116				
*** Sample ID:					Seq: 98	10:34:55	27 Sep 13	HG
					240-29200-a-19-a			
Hg	36.12	ppb	.0000	36.12				
*** Sample ID:					Seq: 99	10:37:19	27 Sep 13	HG
					240-29200-a-20-a			
Hg	3.882	ppb	.0000	3.882				
*** Sample ID:					Seq: 100	10:39:22	27 Sep 13	HG
					mb 240-102517/1-a			
Hg	-.0648	ppb	.0000	-.0648				
*** Sample ID:					Seq: 101	10:41:27	27 Sep 13	HG
					lcs 240-102517/2-a			
Hg	5.246	ppb	.0000	5.246				
*** Check Standard: 6	Ck6CCV				Seq: 102	10:43:29	27 Sep 13	HG
Line Flag	%Rcv.	Found	True	Units	SD/RSD			
Hg	102.1	10.21	10.00	ppb	.0000			
*** Check Standard: 1	Ck1CCB				Seq: 103	10:45:36	27 Sep 13	HG
Line Flag	Found	Range(+/-)	Units	SD/RSD				
Hg	-.0921	.6000	ppb	.0000				
*** Sample ID:					Seq: 104	10:48:08	27 Sep 13	HG
					240-28850-b-1-a			
Hg	1.111	ppb	.0000	1.111				
*** Sample ID:					Seq: 105	10:50:05	27 Sep 13	HG
					240-28850-b-1-b du			
Hg	1.319	ppb	.0000	1.319				
*** Sample ID:					Seq: 106	10:51:59	27 Sep 13	HG
					240-28850-b-1-c ms			
Hg	1.916	ppb	.0000	1.916				
*** Sample ID:					Seq: 107	10:54:03	27 Sep 13	HG
					240-29047-c-13-d			
Hg	.2338	ppb	.0000	.2338				
*** Sample ID:					Seq: 108	10:55:56	27 Sep 13	HG
					240-29047-c-15-b			
Hg	.2213	ppb	.0000	.2213				
*** Sample ID:					Seq: 109	10:57:54	27 Sep 13	HG
					240-29047-c-16-b			
Hg	.2582	ppb	.0000	.2582				
*** Sample ID:					Seq: 110	11:00:08	27 Sep 13	HG
					240-29047-c-17-b			
Hg	.2195	ppb	.0000	.2195				
*** Sample ID:					Seq: 111	11:02:02	27 Sep 13	HG
					240-29047-c-18-b			
Hg	.2827	ppb	.0000	.2827				
*** Sample ID:					Seq: 112	11:03:57	27 Sep 13	HG
					240-29047-c-19-b			
Hg	.2598	ppb	.0000	.2598				

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 240-29047-c-20-b								
Hg	.2743	ppb	.0000	.2743				
Seq: 113 11:06:10 27 Sep 13 HG								
*** Check Standard: 6 Ck6CCV								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		104.9	10.49	10.00	ppb	.0000		
Seq: 114 11:08:24 27 Sep 13 HG								
*** Check Standard: 1 Ck1CCB								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1180	.6000	ppb	.0000			
Seq: 115 11:10:25 27 Sep 13 HG								
*** Sample ID: 240-29280-c-1-b								
Hg	1.186	ppb	.0000	1.186				
Seq: 116 11:12:21 27 Sep 13 HG								
*** Sample ID: 240-29280-c-2-b								
Hg	.4975	ppb	.0000	.4975				
Seq: 117 11:14:18 27 Sep 13 HG								
*** Sample ID: 240-29280-c-3-b								
Hg	.5818	ppb	.0000	.5818				
Seq: 118 11:16:28 27 Sep 13 HG								
*** Sample ID: 240-28850-b-2-a								
Hg	1.114	ppb	.0000	1.114				
Seq: 119 11:19:04 27 Sep 13 HG								
*** Sample ID: 240-28850-b-3-a								
Hg	1.189	ppb	.0000	1.189				
Seq: 120 11:21:54 27 Sep 13 HG								
*** Check Standard: 4 Ck4CRA\MRL								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		118.2	.2363	.2000	ppb	.0000		
Seq: 121 11:24:58 27 Sep 13 HG								
*** Check Standard: 6 Ck6CCV								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		104.7	10.47	10.00	ppb	.0000		
Seq: 122 11:28:46 27 Sep 13 HG								
*** Check Standard: 1 Ck1CCB								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.0465	.6000	ppb	.0000			
Seq: 123 11:31:09 27 Sep 13 HG								
*** Check Standard: 6 Ck6CCV								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		98.16	9.816	10.00	ppb	.0000		
Seq: 124 13:21:33 27 Sep 13 HG								
*** Check Standard: 1 Ck1CCB								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1667	.6000	ppb	.0000			
Seq: 125 13:23:31 27 Sep 13 HG								
*** Sample ID: 240-29200-a-2-a								
Hg	17.48	ppb	.0000	17.48				
Seq: 126 13:25:21 27 Sep 13 HG								
*** Sample ID: 240-29200-a-2-b ms								
Hg	12.69	ppb	.0000	12.69				
Seq: 127 13:27:42 27 Sep 13 HG								
*** Sample ID: 240-29200-a-2-c msd								
Hg	13.35	ppb	.0000	13.35				
Seq: 128 13:30:25 27 Sep 13 HG								

POST-RUN REPORT

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 240-29200-a-3-a@10 Seq: 129 13:33:18 27 Sep 13 HG								
Hg	1.908	ppb	.0000	1.908				
*** Sample ID: 240-29200-a-9-a Seq: 130 13:35:22 27 Sep 13 HG								
Hg	51.71	H ppb	.0000	51.71				
*** Sample ID: 240-29200-a-13-a@10 Seq: 131 13:38:04 27 Sep 13 HG								
Hg	4.362	ppb	.0000	4.362				
*** Sample ID: 240-29200-a-15-a@10 Seq: 132 13:40:36 27 Sep 13 HG								
Hg	5.033	ppb	.0000	5.033				
*** Sample ID: 240-29200-a-17-a@10 Seq: 133 13:42:31 27 Sep 13 HG								
Hg	6.385	ppb	.0000	6.385				
*** Check Standard: 6 Ck6CCV Seq: 134 13:44:22 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		104.7	10.47	10.00	ppb	.0000		
*** Check Standard: 1 Ck1CCB Seq: 135 13:46:25 27 Sep 13 HG								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.0969	.6000	ppb	.0000			
*** Check Standard: 6 Ck6CCV Seq: 136 14:16:50 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		97.97	9.797	10.00	ppb	.0000		
*** Check Standard: 1 Ck1CCB Seq: 137 14:18:46 27 Sep 13 HG								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1781	.6000	ppb	.0000			
*** Sample ID: 240-29200-a-3-a@10 Seq: 138 14:20:43 27 Sep 13 HG								
Hg	8.303	ppb	.0000	8.303				
*** Sample ID: 240-29200-a-3-a Seq: 139 14:22:46 27 Sep 13 HG								
Hg	49.63	ppb	.0000	49.63				
*** Sample ID: 240-29200-a-9-a@10 Seq: 140 14:25:20 27 Sep 13 HG								
Hg	5.277	ppb	.0000	5.277				
*** Sample ID: 240-29200-a-9-a Seq: 141 14:27:24 27 Sep 13 HG								
Hg	50.68	H ppb	.0000	50.68				
*** Check Standard: 6 Ck6CCV Seq: 142 14:29:49 27 Sep 13 HG								
Line	Flag	%Rcv.	Found	True	Units	SD/RSD		
Hg		100.2	10.02	10.00	ppb	.0000		
*** Check Standard: 1 Ck1CCB Seq: 143 14:31:51 27 Sep 13 HG								
Line	Flag	Found	Range(+/-)	Units	SD/RSD			
Hg		-.1254	.6000	ppb	.0000			

TestAmerica North Canton Hg Data Review Checklist

Run/Project Information: 103298

Circle Methods used: 7470A / 245.1 : 7471:

Run Date: 9/27/13 Analyst: A. Martin Instrument: H4

Review Items

A. Calibration/Instrument Run QC	Yes	No	N/A	2nd Level
1. Instrument calibrated per manufacturer's instructions and at SOP specified levels?	✓			✓
2. ICV/CCV analyzed at appropriate frequency and within control limits?	✓			✓
3. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
4. CRA run?	✓			✓
B. Sample Results				
1. Were samples with concentrations > high calibration standard diluted and reanalyzed?	✓			✓
2. All reported results bracketed by in control QC?	✓			✓
3. Sample analyses done within holding time?	✓			✓
C. Preparation/ Matrix QC				
1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and < RL?	✓			✓
3. MS run at required frequency and within limits?	✓			✓
4. MSD or DU run at required frequency and RPD within SOP limits?	✓			✓
D. Other				
1. Are all nonconformances documented appropriately?	✓			✓
2. Current IDL/MDL data on file?	✓			✓
3. Calculations and Transcription checked for error?	✓			✓
4. All client/project specific requirements met?	✓			✓
5. Date of analysis verified as correct?	✓			✓

Level I

Analyst: A. Martin Date/Time: 9/27/13 Reviewed from 6:48 to 8:32
 Analyst: A. Martin Date/Time: 9/30/13 Reviewed from 8:34 to 14:31

Comments: _____

Level II

Reviewer: Karen Glouta Date/Time: 9/27/13 Reviewed from 6:48 to 8:32
 Reviewer: A. Martin Date/Time: 9/30/2013 Reviewed from 8:34 to 14:31

Comments _____

Curve Date 9/26/13 Curve Time 14:30-15:00 DILUTION H2O 014
 Revised 11/29/2012

METALS BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Batch Number: 102517 Batch Start Date: 09/23/13 15:30 Batch Analyst: Sutherland, Aaron

Batch Method: 7471A Batch End Date: 09/23/13 16:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MTAQUAREGIA 00600	MTHGCALW 00468	MTKMN04W 00049	
MB 240-102517/1		7471A, 7471/DOD		0.60 g	100 mL	5 mL		15 mL	
LCS 240-102517/2		7471A, 7471/DOD		0.60 g	100 mL	5 mL	5 mL	15 mL	
240-28850-B-1	075SB-0010-0001-SO	7471A, 7471/DOD	T	0.64 g	100 mL	5 mL		15 mL	
240-28850-B-1 DU	075SB-0010-0001-SO	7471A, 7471/DOD	T	0.64 g	100 mL	5 mL		15 mL	
240-28850-B-1 MS	075SB-0010-0001-SO	7471A, 7471/DOD	T	0.64 g	100 mL	5 mL	1 mL	15 mL	
240-28850-B-3	075SB-0012-0001-SO	7471A, 7471/DOD	T	0.64 g	100 mL	5 mL		15 mL	
240-28850-B-2	075SB-0011-0001-SO	7471A, 7471/DOD	T	0.58 g	100 mL	5 mL		15 mL	

Batch Notes	
Balance ID	b039
Blank Soil Lot Number	h660-3f026
Hot Block ID number	c2 c1 b1
Pipette ID	383364-383366-1099562
Digestion Tube/Cup Lot #	1303-205

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Batch Number: 103300 Batch Start Date: 09/26/13 14:30 Batch Analyst: Martin, Aaron

Batch Method: 7471A Batch End Date: 09/26/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MTAQUAREGIA 00603	MTHGCALW 00471	MTHgStd 00009	MTKMNO4W 00050
ICV 240-103300/8		7471A, 7471/DOD		100 g	100 mL	5 mL		0.5 mL	15 mL
ICB 240-103300/9		7471A, 7471/DOD		100 g	100 mL	5 mL			15 mL
CRA 240-103300/10		7471A, 7471/DOD		100 g	100 mL	5 mL	0.2 mL		15 mL
CCV 240-103300/11		7471A, 7471/DOD		100 g	100 mL	5 mL	10 mL		15 mL
CCB 240-103300/12		7471A, 7471/DOD		100 g	100 mL	5 mL			15 mL

Batch Notes	
Hot Block ID number	B1
Pipette ID	383364-383366-1099562
Digestion Tube/Cup Lot #	1303-205

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

7471/DOD

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 240-28850-1

SDG No.: _____

Project: RVAAP - ECC

Client Sample ID	Lab Sample ID
<u>075SB-0010-0001-SO</u>	<u>240-28850-1</u>
<u>075SB-0011-0001-SO</u>	<u>240-28850-2</u>
<u>075SB-0012-0001-SO</u>	<u>240-28850-3</u>

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 240-28850-1
SDG Number: _____
Matrix: Solid Instrument ID: NOEQUIP
Method: Moisture LOQ Date: 01/28/2010 09:24

Analyte	Wavelength/ Mass	LOQ (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 240-28850-1
SDG Number: _____
Matrix: Solid Instrument ID: NOEQUIP
Method: Moisture XRL Date: 01/28/2010 09:24

Analyte	Wavelength/ Mass	XRL (mg/L)	
Percent Moisture		10	
Percent Solids		10	

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Instrument ID: NOEQUIP Method: Moisture

Start Date: 09/11/2013 13:43 End Date: 09/11/2013 16:39

Lab Sample ID	D / F	T y p e	Time	Analytes																	
				% S o l	M o i s t																
ZZZZZZ			13:43																		
ZZZZZZ			13:43																		
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ZZZZZZ			13:43																		
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240-28850-1	1	T	15:00	X	X																
240-28850-2 DU	1	T	15:00	X	X																
240-28850-2	1	T	15:00	X	X																

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Instrument ID: NOEQUIP Method: Moisture

Start Date: 09/11/2013 13:43 End Date: 09/11/2013 16:39

Lab Sample ID	D / F	T y p e	Time	Analytes																	
				% S o l	M o i s t																
ZZZZZZ			16:39																		
ZZZZZZ			16:39																		
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Prep Types
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 240-28850-1

SDG No.: _____

Batch Number: 101036 Batch Start Date: 09/11/13 13:43 Batch Analyst: Eikelberry, Nicholas

Batch Method: Moisture Batch End Date: 09/12/13 09:47

Lab Sample ID	Client Sample ID	Method Chain	Basis	DishWeight	SampleMassWet	SampleMassDry			
240-28850-A-1	075SB-0010-0001-SO	Moisture	T	4.4062 g	26.5102 g	22.4480 g			
240-28850-A-2 DU	075SB-0011-0001-SO	Moisture	T	4.4062 g	10.0950 g	9.2287 g			
240-28850-A-2	075SB-0011-0001-SO	Moisture	T	4.4062 g	11.4640 g	10.5020 g			
240-28850-A-3	075SB-0012-0001-SO	Moisture	T	4.4062 g	22.7009 g	20.6884 g			

Batch Notes	
Balance ID	B047 No Unit
Date samples were placed in the oven	9/11/13
Oven Temp when samples are put in oven	103.3 Degrees C
Time samples were place in the oven	17:30
Date samples were removed from oven	9/12/13
Oven Temp when samples removed from oven	103.3 Degrees C
Time Samples were removed from oven	5:45
Oven ID	002
ID number of the thermometer	Tempguard Box C#6

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Moisture

Shipping and Receiving Documents

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

1.8

Chain of Custody Record

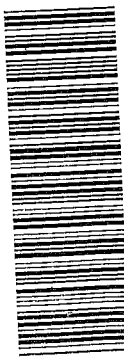
TAL-4142 (0408)

Client: **ECC** Project Manager: **A. Cassanova** Chain of Custody Number: **014602**
 Address: **33 Borden Road NW, West #420** Telephone Number (Area Code)/Fax Number: **9/10/13** Page **1** of **1**
 City: **MANASSAS** State: **VA** Zip Code: **01752** Site Contact: **MARK LOBO** Lab Contact: **MARK LOBO**

Project Name and Location (State): **LAB COURIER** Carrier/Waybill Number: **LAB COURIER**
 Analysis (Attach list if more space is needed): **XXXX MERCURY**

Contract/Purchase Order/Quote No. _____
 Special Instructions/Conditions of Receipt: _____

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives														
			Air	Aqueous	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH									
0755B-0010-0001-J0	9/10/13	1300																		
.. - 0011 - ..	↓	1315																		
.. - 0012 - ..	↓	1330																		



240-28850 Chain of Custody

Possible Hazard Identification:
 Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal By Lab Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required:
 24 Hours 48 Hours 7 Days 14 Days 21 Days Other _____

Relinquished By: **RC Gibson** Date: **9/10/13** Time: **1530**

Relinquished By: **RC Gibson** Date: **9-10-13** Time: **1731**

Relinquished By: _____ Date: _____ Time: _____

Comments: **Seals were cut when received not noticed or noted by client RCR**

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Hold Copy
Not our seal/S

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 28850

Client ECC Site Name _____

Cooler unpacked by:
Derek W. Steer

Cooler Received on 9-10-13 Opened on 9-11-13

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# A (CF -1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN# 4 (CF 0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN# 5 (CF +1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN# 8 (CF -0 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.8 °C

See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 Yes No

-Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were custody seals on the bottle(s)? Yes No

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Did all bottles arrive in good condition (Unbroken)? Yes No

7. Could all bottle labels be reconciled with the COC? Yes No

8. Were correct bottle(s) used for the test(s) indicated? Yes No

9. Sufficient quantity received to perform indicated analyses? Yes No

10. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC376062

11. Were VOAs on the COC? Yes No

12. Were air bubbles >6 mm in any VOA vials? Yes No NA

13. Was a trip blank present in the cooler(s)? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

[Signature]

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____