

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

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North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-35049-1

Client Project/Site: Satralloy

For:

Golder Associates Inc.

1335 Dublin Road

Suite 126-D

Columbus, Ohio 43215

Attn: Mr. Bob Ireson



Authorized for release by:

3/25/2014 7:51:43 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes
F1	MS and/or MSD Recovery exceeds the control limits
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Job ID: 240-35049-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Golder Associates Inc.

Project: Satralloy

Report Number: 240-35049-1

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 3/14/2014 7:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

Method(s) SM 3500 CR D: The following sample(s) was received outside of holding time: DOWNSTREAM (240-35049-6), DOWNSTREAM DUP (240-35049-8), GC 4 (240-35049-5), GC 5 (240-35049-4), GC 6 (240-35049-3), GC 9 (240-35049-2), GC 9 DUP (240-35049-7), UPSTREAM (240-35049-1). Per the client the analyses was performed.

TOTAL RECOVERABLE METALS (ICPMS)

Samples UPSTREAM (240-35049-1), GC 9 (240-35049-2), GC 6 (240-35049-3), GC 5 (240-35049-4), GC 4 (240-35049-5) and DOWNSTREAM (240-35049-6) were analyzed for total recoverable metals (ICPMS) in accordance with EPA Method 200.8. The samples were prepared on 03/17/2014 and analyzed on 03/18/2014.

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

TOTAL DISSOLVED SOLIDS

Samples UPSTREAM (240-35049-1), GC 9 (240-35049-2), GC 6 (240-35049-3), GC 5 (240-35049-4), GC 4 (240-35049-5) and DOWNSTREAM (240-35049-6) were analyzed for total dissolved solids in accordance with SM 2540C. The samples were analyzed on

Case Narrative

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Job ID: 240-35049-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

03/17/2014.

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

TOTAL SUSPENDED SOLIDS

Samples UPSTREAM (240-35049-1), GC 9 (240-35049-2), GC 6 (240-35049-3), GC 5 (240-35049-4), GC 4 (240-35049-5) and DOWNSTREAM (240-35049-6) were analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 03/18/2014.

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

HEXAVALENT CHROMIUM

Samples UPSTREAM (240-35049-1), GC 9 (240-35049-2), GC 6 (240-35049-3), GC 5 (240-35049-4), GC 4 (240-35049-5) and DOWNSTREAM (240-35049-6) were analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 03/14/2014.

Cr (VI) was detected in method blank MB 240-122543/22 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Cr (VI) failed the recovery criteria low for the MS/MSD of sample UPSTREAMMS/MSD (240-35049-1) in batch 240-122543. Refer to the QC report for details.

No other difficulties were encountered during the hexavalent chromium analysis. All other quality control parameters were within the acceptance limits.

PH

Samples UPSTREAM (240-35049-1), GC 9 (240-35049-2), GC 6 (240-35049-3), GC 5 (240-35049-4), GC 4 (240-35049-5) and DOWNSTREAM (240-35049-6) were analyzed for pH in accordance with SM 4500 H+ B. The samples were analyzed on 03/14/2014.

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

Method Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	TAL CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN
SM 4500 H+ B	pH	SM	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-35049-1	UPSTREAM	Water	03/12/14 13:05	03/14/14 07:50
240-35049-2	GC 9	Water	03/12/14 13:40	03/14/14 07:50
240-35049-3	GC 6	Water	03/12/14 13:50	03/14/14 07:50
240-35049-4	GC 5	Water	03/12/14 14:13	03/14/14 07:50
240-35049-5	GC 4	Water	03/12/14 14:26	03/14/14 07:50
240-35049-6	DOWNSTREAM	Water	03/12/14 14:36	03/14/14 07:50

Detection Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: UPSTREAM

Lab Sample ID: 240-35049-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	4.0		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	490		10	10	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	120		4.0	4.0	mg/L	1		SM 2540D	Total/NA
pH	8.00	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC 9

Lab Sample ID: 240-35049-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	300		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	330		10	10	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	120		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Cr (VI)	0.16	H B	0.010	0.0020	mg/L	1		SM 3500 CR D	Total/NA
pH	8.41	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC 6

Lab Sample ID: 240-35049-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	260		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	640		10	10	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	250		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Cr (VI)	0.0036	J H B	0.010	0.0020	mg/L	1		SM 3500 CR D	Total/NA
pH	8.03	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC 5

Lab Sample ID: 240-35049-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	980		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	410		10	10	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	540		4.0	4.0	mg/L	1		SM 2540D	Total/NA
Cr (VI)	0.23	H B	0.010	0.0020	mg/L	1		SM 3500 CR D	Total/NA
pH	8.91	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: GC 4

Lab Sample ID: 240-35049-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	540		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	1100		10	10	mg/L	1		SM 2540C	Total/NA
Cr (VI)	0.47	H B	0.010	0.0020	mg/L	1		SM 3500 CR D	Total/NA
pH	11.2	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DOWNSTREAM

Lab Sample ID: 240-35049-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	7.8		2.0	2.0	ug/L	1		200.8	Total Recoverable
Total Dissolved Solids	730		10	10	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	180		4.0	4.0	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: DOWNSTREAM (Continued)

Lab Sample ID: 240-35049-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0024	J H B	0.010	0.0020	mg/L	1		SM 3500 CR D	Total/NA
pH	8.04	HF	0.100	0.100	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: UPSTREAM

Lab Sample ID: 240-35049-1

Date Collected: 03/12/14 13:05

Matrix: Water

Date Received: 03/14/14 07:50

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	4.0		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	490		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	120		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	<0.0020	H	0.010	0.0020	mg/L			03/14/14 09:24	1
pH	8.00	HF	0.100	0.100	SU			03/14/14 12:56	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: GC 9

Date Collected: 03/12/14 13:40

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-2

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	300		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 13:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	330		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	120		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	0.16	H B	0.010	0.0020	mg/L			03/14/14 09:36	1
pH	8.41	HF	0.100	0.100	SU			03/14/14 12:45	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: GC 6

Date Collected: 03/12/14 13:50

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-3

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	260		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 13:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	640		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	250		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	0.0036	J H B	0.010	0.0020	mg/L			03/14/14 09:33	1
pH	8.03	HF	0.100	0.100	SU			03/14/14 11:58	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: GC 5

Date Collected: 03/12/14 14:13

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-4

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	980		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 13:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	410		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	540		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	0.23	H B	0.010	0.0020	mg/L			03/14/14 09:33	1
pH	8.91	HF	0.100	0.100	SU			03/14/14 12:33	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: GC 4

Date Collected: 03/12/14 14:26

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-5

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	540		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 13:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1100		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	<4.0		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	0.47	H B	0.010	0.0020	mg/L			03/14/14 09:34	1
pH	11.2	HF	0.100	0.100	SU			03/14/14 12:10	1

TestAmerica Canton

Client Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: DOWNSTREAM

Lab Sample ID: 240-35049-6

Date Collected: 03/12/14 14:36

Matrix: Water

Date Received: 03/14/14 07:50

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	7.8		2.0	2.0	ug/L		03/17/14 08:19	03/18/14 13:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	730		10	10	mg/L			03/17/14 15:45	1
Total Suspended Solids	180		4.0	4.0	mg/L			03/18/14 08:33	1
Cr (VI)	0.0024	J H B	0.010	0.0020	mg/L			03/14/14 09:35	1
pH	8.04	HF	0.100	0.100	SU			03/14/14 11:47	1

TestAmerica Canton

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 240-122734/1-A
Matrix: Water
Analysis Batch: 123065

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 122734

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<2.0		2.0	2.0	ug/L	-	03/17/14 08:19	03/18/14 11:51	1

Lab Sample ID: LCS 240-122734/2-A
Matrix: Water
Analysis Batch: 123065

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 122734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	1000	926		ug/L	-	93	85 - 115

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-122863/1
Matrix: Water
Analysis Batch: 122863

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L	-		03/17/14 15:45	1

Lab Sample ID: LCS 240-122863/2
Matrix: Water
Analysis Batch: 122863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	622	664		mg/L	-	107	88 - 110

Lab Sample ID: 240-35049-4 DU
Matrix: Water
Analysis Batch: 122863

Client Sample ID: GC 5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	410		405		mg/L	-	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 240-122920/1
Matrix: Water
Analysis Batch: 122920

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<4.0		4.0	4.0	mg/L	-		03/18/14 08:33	1

Lab Sample ID: LCS 240-122920/2
Matrix: Water
Analysis Batch: 122920

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	46.3	37.0		mg/L	-	80	73 - 113

TestAmerica Canton

QC Sample Results

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 240-35049-3 DU

Matrix: Water

Analysis Batch: 122920

Client Sample ID: GC 6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Suspended Solids	250		225		mg/L		9	10

Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-122543/22

Matrix: Water

Analysis Batch: 122543

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.00244	J	0.010	0.0020	mg/L			03/14/14 09:23	1

Lab Sample ID: LCS 240-122543/23

Matrix: Water

Analysis Batch: 122543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.247		mg/L		99	80 - 118

Lab Sample ID: 240-35049-1 MS

Matrix: Water

Analysis Batch: 122543

Client Sample ID: UPSTREAM

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	<0.0020	H	0.250	<0.0020	F1	mg/L		0	41 - 136

Lab Sample ID: 240-35049-1 MSD

Matrix: Water

Analysis Batch: 122543

Client Sample ID: UPSTREAM

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cr (VI)	<0.0020	H	0.250	<0.0020	F1	mg/L		0	41 - 136	NC	20

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 240-122549/2

Matrix: Water

Analysis Batch: 122549

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	6.47	6.550		SU		101	97 - 103

Lab Sample ID: 240-35049-4 DU

Matrix: Water

Analysis Batch: 122549

Client Sample ID: GC 5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	8.91	HF	8.860		SU		0.6	20

TestAmerica Canton

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Metals

Prep Batch: 122734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total Recoverable	Water	200.8	
240-35049-2	GC 9	Total Recoverable	Water	200.8	
240-35049-3	GC 6	Total Recoverable	Water	200.8	
240-35049-4	GC 5	Total Recoverable	Water	200.8	
240-35049-5	GC 4	Total Recoverable	Water	200.8	
240-35049-6	DOWNSTREAM	Total Recoverable	Water	200.8	
LCS 240-122734/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
MB 240-122734/1-A	Method Blank	Total Recoverable	Water	200.8	

Analysis Batch: 123065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total Recoverable	Water	200.8	122734
240-35049-2	GC 9	Total Recoverable	Water	200.8	122734
240-35049-3	GC 6	Total Recoverable	Water	200.8	122734
240-35049-4	GC 5	Total Recoverable	Water	200.8	122734
240-35049-5	GC 4	Total Recoverable	Water	200.8	122734
240-35049-6	DOWNSTREAM	Total Recoverable	Water	200.8	122734
LCS 240-122734/2-A	Lab Control Sample	Total Recoverable	Water	200.8	122734
MB 240-122734/1-A	Method Blank	Total Recoverable	Water	200.8	122734

General Chemistry

Analysis Batch: 122543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total/NA	Water	SM 3500 CR D	
240-35049-1 MS	UPSTREAM	Total/NA	Water	SM 3500 CR D	
240-35049-1 MSD	UPSTREAM	Total/NA	Water	SM 3500 CR D	
240-35049-2	GC 9	Total/NA	Water	SM 3500 CR D	
240-35049-3	GC 6	Total/NA	Water	SM 3500 CR D	
240-35049-4	GC 5	Total/NA	Water	SM 3500 CR D	
240-35049-5	GC 4	Total/NA	Water	SM 3500 CR D	
240-35049-6	DOWNSTREAM	Total/NA	Water	SM 3500 CR D	
LCS 240-122543/23	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-122543/22	Method Blank	Total/NA	Water	SM 3500 CR D	

Analysis Batch: 122549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total/NA	Water	SM 4500 H+ B	
240-35049-2	GC 9	Total/NA	Water	SM 4500 H+ B	
240-35049-3	GC 6	Total/NA	Water	SM 4500 H+ B	
240-35049-4	GC 5	Total/NA	Water	SM 4500 H+ B	
240-35049-4 DU	GC 5	Total/NA	Water	SM 4500 H+ B	
240-35049-5	GC 4	Total/NA	Water	SM 4500 H+ B	
240-35049-6	DOWNSTREAM	Total/NA	Water	SM 4500 H+ B	
LCS 240-122549/2	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 122863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total/NA	Water	SM 2540C	
240-35049-2	GC 9	Total/NA	Water	SM 2540C	

TestAmerica Canton

QC Association Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

General Chemistry (Continued)

Analysis Batch: 122863 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-3	GC 6	Total/NA	Water	SM 2540C	
240-35049-4	GC 5	Total/NA	Water	SM 2540C	
240-35049-4 DU	GC 5	Total/NA	Water	SM 2540C	
240-35049-5	GC 4	Total/NA	Water	SM 2540C	
240-35049-6	DOWNSTREAM	Total/NA	Water	SM 2540C	
LCS 240-122863/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 240-122863/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 122920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-35049-1	UPSTREAM	Total/NA	Water	SM 2540D	
240-35049-2	GC 9	Total/NA	Water	SM 2540D	
240-35049-3	GC 6	Total/NA	Water	SM 2540D	
240-35049-3 DU	GC 6	Total/NA	Water	SM 2540D	
240-35049-4	GC 5	Total/NA	Water	SM 2540D	
240-35049-5	GC 4	Total/NA	Water	SM 2540D	
240-35049-6	DOWNSTREAM	Total/NA	Water	SM 2540D	
LCS 240-122920/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-122920/1	Method Blank	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: UPSTREAM

Date Collected: 03/12/14 13:05

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 12:55	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:24	LCN	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 12:56	WAL	TAL CAN

Client Sample ID: GC 9

Date Collected: 03/12/14 13:40

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 13:02	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:36	LCN	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 12:45	WAL	TAL CAN

Client Sample ID: GC 6

Date Collected: 03/12/14 13:50

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 13:09	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:33	LCN	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 11:58	WAL	TAL CAN

Client Sample ID: GC 5

Date Collected: 03/12/14 14:13

Date Received: 03/14/14 07:50

Lab Sample ID: 240-35049-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 13:16	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:33	LCN	TAL CAN

TestAmerica Canton

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Client Sample ID: GC 5

Lab Sample ID: 240-35049-4

Date Collected: 03/12/14 14:13

Matrix: Water

Date Received: 03/14/14 07:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 12:33	WAL	TAL CAN

Client Sample ID: GC 4

Lab Sample ID: 240-35049-5

Date Collected: 03/12/14 14:26

Matrix: Water

Date Received: 03/14/14 07:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 13:23	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:34	LCN	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 12:10	WAL	TAL CAN

Client Sample ID: DOWNSTREAM

Lab Sample ID: 240-35049-6

Date Collected: 03/12/14 14:36

Matrix: Water

Date Received: 03/14/14 07:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			122734	03/17/14 08:19	LPM	TAL CAN
Total Recoverable	Analysis	200.8		1	123065	03/18/14 13:30	NJT	TAL CAN
Total/NA	Analysis	SM 2540C		1	122863	03/17/14 15:45	JMB	TAL CAN
Total/NA	Analysis	SM 2540D		1	122920	03/18/14 08:33	LCN	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	122543	03/14/14 09:35	LCN	TAL CAN
Total/NA	Analysis	SM 4500 H+ B		1	122549	03/14/14 11:47	WAL	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Golder Associates Inc.
Project/Site: Satralloy

TestAmerica Job ID: 240-35049-1

Laboratory: TestAmerica Canton

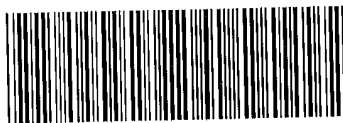
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14
Connecticut	State Program	1	PH-0590	12-31-14
Florida	NELAP	4	E87225	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200004	07-31-14
Kansas	NELAP	7	E-10336	04-01-14 *
Kentucky (UST)	State Program	4	58	06-30-14
L-A-B	DoD ELAP		L2315	07-18-16
Minnesota	NELAP	5	039-999-348	12-31-14
Nevada	State Program	9	OH-000482008A	07-31-14
New Jersey	NELAP	2	OH001	06-30-14
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	10-31-15
Pennsylvania	NELAP	3	68-00340	08-31-14
Texas	NELAP	6		08-31-14
USDA	Federal		P330-13-00319	11-26-16
Virginia	NELAP	3	460175	09-14-14
Washington	State Program	10	C971	01-12-15
West Virginia DEP	State Program	3	210	12-31-14
Wisconsin	State Program	5	999518190	08-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Canton

CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



240-35049 Chain of Custody

Phone (330) 497-9396 Fax (330) 497-0772

Chain of Custody Record

FEDEX ACCT # 16451801

THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 35049

Client <u>Golder Assoc</u>	Site Name <u>SW PPP</u>	Cooler unpacked by: <u>Derry Burns</u>
Cooler Received on <u>3/14/14</u>	Opened on <u>3/14/14</u>	
FedEx: 1 st Grd Exp UPS FAS Stetson	Client Drop Off	TestAmerica Courier Other
TestAmerica Cooler #	Foam Box <u>Client Cooler</u>	Box Other
Packing material used: Bubble Wrap	Foam <u>Plastic Bag</u>	None Other
COOLANT: <u>Wet Ice</u>	Blue Ice Dry Ice Water	None

- Cooler temperature upon receipt

IR GUN# A (CF +0 °C) Observed Cooler Temp. <u>1.6</u> °C	Corrected Cooler Temp. <u>1.6</u> °C	☐ See Multiple Cooler Form
IR GUN# 4 (CF -1 °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 +1 °C) Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C	
- Were custody seals on the outside of the cooler(s)? If Yes Quantity _____ 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
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels be reconciled with the COC? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC391902
- Were VOAs on the COC? Yes No
- Were air bubbles >6 mm in any VOA vials? Yes No NA
- Was a trip blank present in the cooler(s)? Yes No

Contacted PM PJO Date 3/14/14 by PTB via Verbal Voice Mail Other

Concerning #14 + HTV

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: gib

Rec'd 2 sets of GC-9 same date & time - will log at end of job as GC-9 Dup 3/12/14 1340 not on COC
Rec'd Downstream Dup 3/12/14 @ 1436 not on COC - will log at end of job

15. SAMPLE CONDITION

Sample(s) all samples Cr+6 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): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
UPSTREAM	240-35049-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC 9	240-35049-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC 6	240-35049-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC 5	240-35049-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC 4	240-35049-A-5	Plastic 250ml - with Nitric Acid	<2	_____	_____
DOWNSTREAM	240-35049-A-6	Plastic 250ml - with Nitric Acid	<2	_____	_____
GC 9 DUP	240-35049-A-7	Plastic 250ml - with Nitric Acid	<2	_____	_____
DOWNSTREAM DUP	240-35049-A-8	Plastic 250ml - with Nitric Acid	<2	_____	_____