

## ANALYTICAL REPORT

Job Number: 280-116186-2

Job Description: Leidos RFP# 001088 - Ravenna AAP-66

For:

Leidos, Inc.

Picatinny Arsenal

356 Ninth Avenue

Suite 106

Dover, NJ 07801

Attention: Rita Schmon-Stasik



Approved for release.  
Donna R Rydberg  
Senior Project Manager  
11/23/2018 3:52 PM

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Donna R Rydberg, Senior Project Manager  
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11/23/2018

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

**TestAmerica Laboratories, Inc.**

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)

# Table of Contents

Cover Title Page . . . . .	1
Data Summaries . . . . .	4
Definitions . . . . .	4
Case Narrative . . . . .	5
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Default Detection Limits . . . . .	8
QC Sample Results . . . . .	9
QC Association . . . . .	10
Chronicle . . . . .	11
Certification Summary . . . . .	12
Method Summary . . . . .	13
Sample Summary . . . . .	14
Reagent Traceability . . . . .	15
COAs . . . . .	16
Inorganic Sample Data . . . . .	20
General Chemistry Data . . . . .	20
Gen Chem Cover Page . . . . .	21
Gen Chem Sample Data . . . . .	22
Gen Chem QC Data . . . . .	23
Gen Chem ICV/CCV . . . . .	23
Gen Chem Blanks . . . . .	25
Gen Chem LCS/LCSD . . . . .	26
Gen Chem MDL . . . . .	27
Gen Chem Analysis Run Log . . . . .	29
Gen Chem Prep Data . . . . .	32

# Table of Contents

Gen Chem Raw Data .....	34
Subcontracted Data .....	35
Shipping and Receiving Documents .....	36
Client Chain of Custody .....	37
Sample Receipt Checklist .....	47

# Definitions/Glossary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## Glossary

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<b>Abbreviation</b>	<b>These commonly used abbreviations may or may not be present in this report.</b>
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: Leidos, Inc.**

**Project: Leidos RFP# 001088 - Ravenna AAP-66**

**Report Number: 280-116186-2**

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.

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.

### **RECEIPT**

The samples were received on 10/26/2018 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 8 coolers at receipt time were 1.3° C, 1.4° C, 2.0° C, 2.0° C, 2.8° C, 2.9° C, 3.3° C and 3.8° C.

This report contains the result for the hexavalent chromium sample which is reported under a separate SDG from the other samples as the TA North Canton laboratory does not have DOD certs for this method. All other tests listed on the COC will be reported under SDG 280-116186-2.

### **HEXAVALENT CHROMIUM**

Sample FWGmw-024-181001-GW (280-116186-1) was analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 10/25/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

**Client Sample ID: FWGmw-024-181001-GW**

**Lab Sample ID: 280-116186-1**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

# Client Sample Results

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## General Chemistry

Client Sample ID: FWGmw-024-181001-GW

Lab Sample ID: 280-116186-1

Date Collected: 10/25/18 10:05

Matrix: Water

Date Received: 10/26/18 13:19

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0030	mg/L		10/25/18 17:30	1

# Default Detection Limits

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## General Chemistry

Analyte	RL	MDL	Units	Method
Hexavalent chromium	0.020	0.0030	mg/L	7196A



# QC Sample Results

Client: Leidos, Inc.  
 Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## Method: 7196A - Chromium, Hexavalent

**Lab Sample ID: MB 240-351822/3**  
**Matrix: Water**  
**Analysis Batch: 351822**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	ND		0.020	0.0030	mg/L		10/25/18 08:20	1

**Lab Sample ID: LCS 240-351822/4**  
**Matrix: Water**  
**Analysis Batch: 351822**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexavalent chromium	0.250	0.276		mg/L		111	80 - 123

# QC Association Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## General Chemistry

### Analysis Batch: 351822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-116186-1	FWGmw-024-181001-GW	Total/NA	Water	7196A	
MB 240-351822/3	Method Blank	Total/NA	Water	7196A	
LCS 240-351822/4	Lab Control Sample	Total/NA	Water	7196A	

# Lab Chronicle

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

**Client Sample ID: FWGmw-024-181001-GW**

**Lab Sample ID: 280-116186-1**

**Date Collected: 10/25/18 10:05**

**Matrix: Water**

**Date Received: 10/26/18 13:19**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	50 mL	50 mL	351822	10/25/18 17:30	BLW	TAL CAN

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Leidos, Inc.  
 Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

## Laboratory: TestAmerica Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-19

## Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
7196A	Chromium, Hexavalent	SW846	TAL CAN

**Protocol References:**

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

**Laboratory References:**

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

# Sample Summary

Client: Leidos, Inc.  
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

TestAmerica Job ID: 280-116186-2

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collected</b>	<b>Received</b>
280-116186-1	FWGmw-024-181001-GW	Water	10/25/18 10:05	10/26/18 13:19

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>WCCHROME50PM2 00023</b>	03/11/19	09/11/18	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00003	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00003	06/06/19		Fisher, Lot 140919		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g
<b>WCCHROME50PPM 00025</b>	03/11/19	09/11/18	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00004	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00004	09/07/21		Fisher, Lot 126893		(Purchased Reagent)		Hexavalent chromium	0.35344 g/g

Reagent

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**WCKDICHROME62\_00003**





1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

# Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0064970

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

<b>Catalog Number</b>	<b>P188</b>	<b>Quality Test / Release Date</b> 2/25/2014	
<b>Lot Number</b>	<b>140919</b>		
<b>Description</b>	<b>POTASSIUM DICHROMATE, A.C.S.</b>		
<b>Country of Origin</b>	<b>United States</b>	<b>* Suggested Retest Date</b>	<b>Feb-2019</b>
<b>Chemical Origin</b>	<b>Inorganic-non animal</b>		
<b>BSE/TSE Comment</b>	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	FINE ORANGE-RED CRYSTALS
ASSAY	%	>= 99	99.9
CALCIUM	%	<= 0.003	0.0010
CHLORIDE	%	<= 0.001	<0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.002
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.02
SODIUM (Na)	%	<= 0.02	0.001
SULFATE (SO4)	%	<= 0.005	0.002



*Edgar E. Hara*

Lab Manager Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.  
 \*Based on suggested storage condition.

Reagent

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**WCKDICHROME62\_00004**



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 Fair Lawn, NJ 07410  
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 201.796.1329 fax

# Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by DNV Certificate number CERT-08052-2006-AQ-HOU-ANAB

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

<b>Catalog Number</b>	<b>P188</b>	<b>Mfg. Date</b>	<b>11/16/2012</b>
<b>Lot Number</b>	<b>126893</b>		
<b>Description</b>	<b>POTASSIUM DICHROMATE, A.C.S.</b>		
<b>Country of Origin</b>	<b>United States</b>	<b>Recommended Retest Date</b>	<b>Nov-2017</b>
<b>Chemical Origin</b>	<b>Inorganic-non animal</b>		
<b>BSE/TSE Comment</b>	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red powder
ASSAY	%	>= 99	99.8
CALCIUM	%	<= 0.003	<0.0010
CHLORIDE	%	<= 0.001	<0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.004
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.03
SODIUM (Na)	%	<= 0.02	0.005
SULFATE (SO4)	%	<= 0.005	0.003



*Edgar E. Hara*

Lab Manager Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.

# GENERAL CHEMISTRY

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 280-116186-2

SDG No.: \_\_\_\_\_

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID  
FWGmw-024-181001-GW

Lab Sample ID  
280-116186-1

Comments:

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1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: FWGmw-024-181001-GW

Lab Sample ID: 280-116186-1

Lab Name: TestAmerica Canton

Job No.: 280-116186-2

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 10/25/2018 10:05

Reporting Basis: WET

Date Received: 10/26/2018 13:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	ND	0.020	0.0030	mg/L			1	7196A

2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2  
 SDG No.: \_\_\_\_\_  
 Analyst: MMM Batch Start Date: 10/11/2018  
 Reporting Units: mg/L Analytical Batch No.: 349697

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	17:26	Hexavalent chromium	0.269	0.250	108	90-110		WCCHROME50PM2_0002 3
8	ICB	17:27	Hexavalent chromium	0.010				U	

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

2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2  
 SDG No.: \_\_\_\_\_  
 Analyst: BLW Batch Start Date: 10/25/2018  
 Reporting Units: mg/L Analytical Batch No.: 351822

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
2	CCB	08:19	Hexavalent chromium	ND					
11	CCV	08:27	Hexavalent chromium	0.249	0.250	100	90-110		WCCHROME50PPM_00025
12	CCB	08:28	Hexavalent chromium	ND					
29	CCV	14:06	Hexavalent chromium	0.248	0.250	99	90-110		WCCHROME50PPM_00025
30	CCB	14:07	Hexavalent chromium	ND					
37	CCV	15:51	Hexavalent chromium	0.248	0.250	99	90-110		WCCHROME50PPM_00025
38	CCB	15:52	Hexavalent chromium	ND					
40	CCV	17:31	Hexavalent chromium	0.245	0.250	98	90-110		WCCHROME50PPM_00025
41	CCB	17:31	Hexavalent chromium	ND					

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



3-IN  
METHOD BLANK  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton

Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 351822 Date: 10/25/2018 08:20							
7196A	MB 240-351822/3	Hexavalent chromium	ND		mg/L	0.020	1

7A-IN  
 LAB CONTROL SAMPLE  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2  
 SDG No.: \_\_\_\_\_  
 Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351822 Date: 10/25/2018 08:20			LCS Source: WCCHROME50PM2_00023								
7196A	LCS 240-351822/4	Hexavalent chromium	0.276		mg/L	0.250	111	80-123			

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

9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 280-116186-2  
SDG Number: \_\_\_\_\_  
Matrix: Water Instrument ID: OSCAR  
Method: 7196A MDL Date: 04/25/2017 11:21

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Hexavalent chromium		0.02	0.003

9-IN  
CALIBRATION BLANK DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job Number: 280-116186-2  
SDG Number: \_\_\_\_\_  
Matrix: Water Instrument ID: OSCAR  
Method: 7196A XMDL Date: 04/25/2017 11:21

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Hexavalent chromium		0.02	0.003

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 10/11/2018 17:20 End Date: 10/11/2018 17:34

Lab Sample Id	D/F	T y p e	Time	Analytes																											
				C r 6																											
IC 240-349697/1	1		17:20	X																											
IC 240-349697/2	1		17:21	X																											
IC 240-349697/3	1		17:22	X																											
IC 240-349697/4	1		17:23	X																											
IC 240-349697/5	1		17:24	X																											
IC 240-349697/6	1		17:25	X																											
ICV 240-349697/7	1		17:26	X																											
ICB 240-349697/8	1		17:27	X																											
ZZZZZZ			17:28																												
ZZZZZZ			17:29																												
ZZZZZZ			17:30																												
ZZZZZZ			17:31																												
ZZZZZZ			17:32																												
CCV 240-349697/14			17:33																												
CCB 240-349697/15			17:34																												

Prep Types: \_\_\_\_\_  
=

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 10/25/2018 08:19 End Date: 10/25/2018 17:31

Lab Sample Id	D/F	T y p e	Time	Analytes																			
				C r 6																			
CCV 240-351822/1			08:19																				
CCB 240-351822/2	1		08:19	X																			
MB 240-351822/3	1	T	08:20	X																			
LCS 240-351822/4	1	T	08:20	X																			
ZZZZZZ			08:21																				
ZZZZZZ			08:22																				
ZZZZZZ			08:23																				
ZZZZZZ			08:24																				
ZZZZZZ			08:25																				
ZZZZZZ			08:26																				
CCV 240-351822/11	1		08:27	X																			
CCB 240-351822/12	1		08:28	X																			
ZZZZZZ			08:29																				
ZZZZZZ			08:30																				
ZZZZZZ			08:31																				
ZZZZZZ			08:32																				
ZZZZZZ			08:33																				
CCV 240-351822/18			08:34																				
CCB 240-351822/19			08:35																				
ZZZZZZ			09:23																				
ZZZZZZ			09:24																				
ZZZZZZ			09:25																				
ZZZZZZ			09:26																				
ZZZZZZ			09:26																				
ZZZZZZ			09:27																				
CCV 240-351822/26			09:28																				
CCB 240-351822/27			09:28																				
ZZZZZZ			14:05																				
CCV 240-351822/29	1		14:06	X																			
CCB 240-351822/30	1		14:07	X																			
ZZZZZZ			15:45																				
ZZZZZZ			15:46																				
ZZZZZZ			15:47																				
ZZZZZZ			15:48																				
ZZZZZZ			15:49																				
ZZZZZZ			15:50																				
CCV 240-351822/37	1		15:51	X																			
CCB 240-351822/38	1		15:52	X																			
ZZZZZZ			17:29																				
ZZZZZZ			17:29																				
ZZZZZZ			17:29																				

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 10/25/2018 08:19 End Date: 10/25/2018 17:31

Lab Sample Id	D/F	Type	Time	Analytes																											
				C	r	6																									
ZZZZZZ			17:29																												
280-116186-1	1	T	17:30	X																											
CCV 240-351822/40	1		17:31	X																											
CCB 240-351822/41	1		17:31	X																											

Prep Types: \_\_\_\_\_  
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Batch Number: 349697 Batch Start Date: 10/11/18 17:20 Batch Analyst: Moser, Morgan

Batch Method: 7196A Batch End Date: 10/11/18 17:35

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	UnCorResp	WCCHROME50PM2 00023	WCCHROME50PPM 00025	
IC 240-349697/1		7196A		50 mL	50 mL	0 Absorbance			
IC 240-349697/2		7196A		50 mL	50 mL	0.004 Absorbance		0.005 mL	
IC 240-349697/3		7196A		50 mL	50 mL	0.008 Absorbance		0.01 mL	
IC 240-349697/4		7196A		50 mL	50 mL	0.084 Absorbance		0.1 mL	
IC 240-349697/5		7196A		50 mL	50 mL	0.191 Absorbance		0.25 mL	
IC 240-349697/6		7196A		50 mL	50 mL	0.369 Absorbance		0.5 mL	
ICV 240-349697/7		7196A		50 mL	50 mL	0.202 Absorbance	0.25 mL		
ICB 240-349697/8		7196A		50 mL	50 mL	0 Absorbance			

Batch Notes	
Acid Used for pH Adjustment ID	3715210
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	3830583
Phosphoric Acid ID	3521890
Pipette/Syringe/Dispenser ID	E5

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.



GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Canton Job No.: 280-116186-2

SDG No.: \_\_\_\_\_

Batch Number: 351822 Batch Start Date: 10/25/18 08:19 Batch Analyst: Woodward, Bruce

Batch Method: 7196A Batch End Date: \_\_\_\_\_

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ColorBlk	UnCorResp	WCCHROME50PM2 00023	WCCHROME50PPM 00025
CCB 240-351822/2		7196A		50 mL	50 mL		0 Absorbance		
MB 240-351822/3		7196A		50 mL	50 mL		0 Absorbance		
LCS 240-351822/4		7196A		50 mL	50 mL		0.207 Absorbance	0.25 mL	
CCV 240-351822/11		7196A		50 mL	50 mL		0.187 Absorbance		0.25 mL
CCB 240-351822/12		7196A		50 mL	50 mL		0 Absorbance		
CCV 240-351822/29		7196A		50 mL	50 mL		0.186 Absorbance		0.25 mL
CCB 240-351822/30		7196A		50 mL	50 mL		0 Absorbance		
CCV 240-351822/37		7196A		50 mL	50 mL		0.186 Absorbance		0.25 mL
CCB 240-351822/38		7196A		50 mL	50 mL		0 Absorbance		
280-116186-K-1	FWGmw-024-181001 -GW	7196A	T	50 mL	50 mL	0.001 Absorbance	0.001 Absorbance		
CCV 240-351822/40		7196A		50 mL	50 mL		0.184 Absorbance		0.25 mL
CCB 240-351822/41		7196A		50 mL	50 mL		0 Absorbance		

Batch Notes	
Acid Used for pH Adjustment ID	3715210
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	3863006
Pipette/Syringe/Dispenser ID	E6

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.

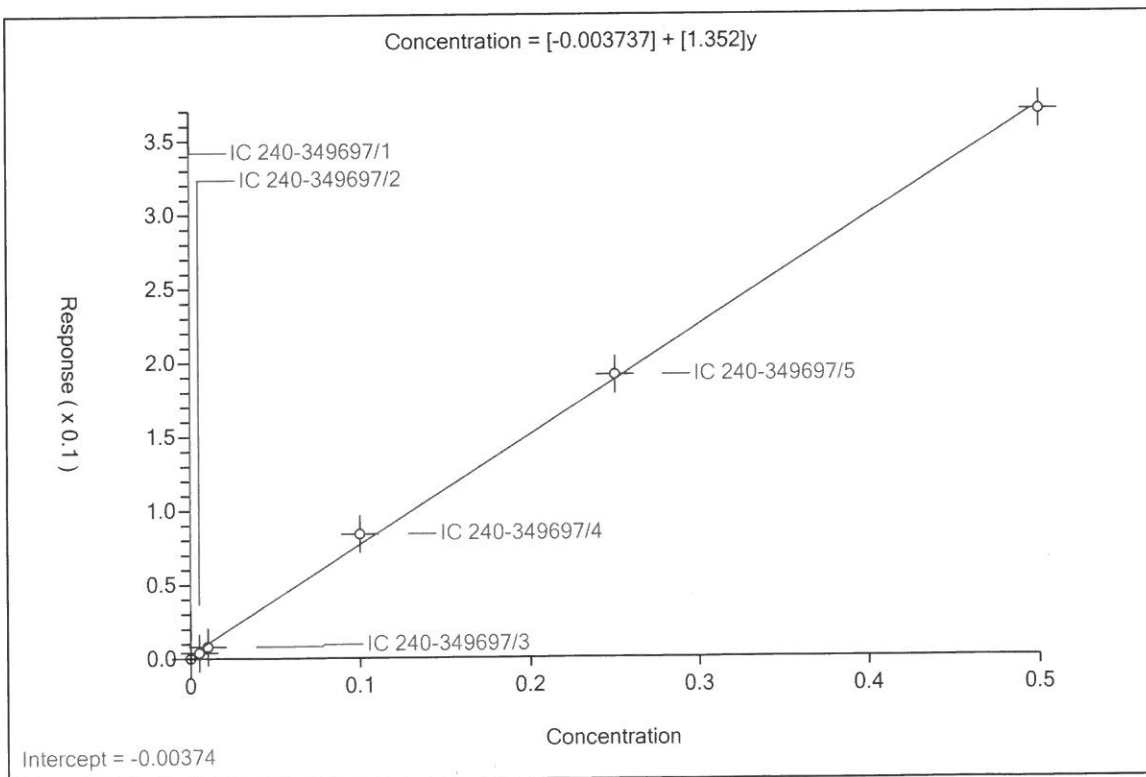
Calibration

Calib 349697-0 / Cr (VI)

Curve Type: Linear  
 Weighting: None  
 Origin: None  
 Dependency: Concentration  
 Calib Mode: ESTD  
 Response Base: AREA  
 RF Rounding: 0

Curve Coefficients	
Intercept:	-0.003737
Slope:	1.352
Error Coefficients	
Standard Error:	0.00659
Relative Standard Error:	42.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999 (0.999)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 240-349697/1	0.0	0.0			NaN	Y
2	IC 240-349697/2	0.004998	0.004			0.800378	Y
3	IC 240-349697/3	0.009995	0.008			0.800378	Y
4	IC 240-349697/4	0.099953	0.084			0.840397	Y
5	IC 240-349697/5	0.249882	0.191			0.764361	Y
6	IC 240-349697/6	0.499764	0.369			0.738349	Y



# Subcontract Data

# Shipping and Receiving Documents

# Chain of Custody Record



COC No.: **RVAAP-032-TA**

Page 1 of 1 Date: **10/25/18**

Name **Leidos**  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: **Jed Thomas**  
 Project: **RVAAP FWGW Sampling Event**  
 Job/P.O. No.: **P010216426**  
 Sampler (Signature) \_\_\_\_\_ (Printed Name)

Laboratory Name: **Test America -Canton**  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax: \_\_\_\_\_  
 Contact: \_\_\_\_\_

Laboratory No. \_\_\_\_\_  
 Sample ID: **FWGmw-024-181001-GW**  
 Site Type: **GW**  
 Depth: **N/A**  
 Date: **10/25/18**  
 Time: **1005**  
 Matrix: **W**  
 Sampler (Signature) **Jackie Mitchell**

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Temperature Blank

Total Number of Containers

Hexavalent Chromium (13)(A1)

Nitrocellulose (12)(A)

Perchlorate (11)(A)

Sulfide (9)(E)

Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)

Cyanide (8)(D)

TAL Metals (7)(C)

PCBs (4)(A)

Pesticides (5)(A)

Explosives (6)(A)

LL PAHs (3)(A)

SVOCs (2)(A)

VOCS (1)(B)

1

1

11

Cr6 filtered



280-116186 Chain of Custody

Shipment Method: Courier

Notes: A. Cool, 4C D. NaOH, pH=12, Cool, 4C  
A1. Field filtered, Cool, 4C E. NaOH/Zn Acetate, pH=9, Cool, 4C  
B. HCl, pH=2, Cool, 4C  
C. HNO3, pH=2, Cool, 4C

Notes: 1. SW 8260  
2. SW 8270  
3. SW 8270S1M  
4. SW 8082  
5. SW 8081  
6. SW 8330  
7. SW 6010  
8. SW 9012  
9. SW 9034  
10. SW 9056/SM2320  
11. SW 6660  
12. EPA 353 2  
13. SW 7186

Notes: Cooler:  
3.1, 2.1  
1.3, 1.3  
2.2, 0.7  
0.6, +0.7  
spun by  
Lab

Notes: Temperature Blank  
Leidos  
8866 Commons Drive  
Twinsburg, OH 44087  
(330) 405-5802

Notes: Lab:  
Leidos  
8866 Commons Drive  
Twinsburg, OH 44087  
(330) 405-5802

Notes: Goldenrod: Field Project Manager  
Yellow: Project QAO  
Pink: Project Manager  
White: Laboratory

Relinquished by	Signature	Date	Time	Received by	Signature	Date	Time	Total Number of Containers	Shipment Method
<b>HEATH-ADAMS</b>	<i>Heath Adams</i>	10/25/18	1000	<b>TAI 240</b>	<i>TAI 240</i>	10/25/18	1000	11	Courier
<b>RECEIVED BY</b>	<i>RC Gibson</i>			<b>RECEIVED BY</b>	<i>RC Gibson</i>				
<b>RECEIVED BY</b>	<i>Rick Gibson</i>			<b>RECEIVED BY</b>	<i>Rick Gibson</i>				
<b>RECEIVED BY</b>	<i>JA Dew</i>			<b>RECEIVED BY</b>	<i>JA Dew</i>				
<b>RECEIVED BY</b>	<i>Jessica Quint</i>			<b>RECEIVED BY</b>	<i>Jessica Quint</i>				

# Chain of Custody Record

COC No.: **RVAAP-025-TA**

Date: **10/25/18**

Page 1 of 1



Name Leidos  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *[Signature]* (Printed Name) **Gabrielle Gromofsky**

Laboratory Name: Test America -Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
 SPECIAL INSTRUCTIONS

Laboratory No.	Sample ID	Site Type	Depth	Date	Time	Matrix	Requested Parameters													Total Number of Containers	Temperature Blank	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
							NOCs (1)(B)	SVOcs (2)(A)	LL PAHs (3)(A)	Explosives (6)(A)	Pesticides (5)(A)	PCBs (4)(A)	TAL Metals (7)(C)	Cyanide (8)(D)	Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)	Sulfide (9)(E)	Perchlorate (11)(A)	Nitrocellulose (12)(A)	Hexavalent Chromium (13)(A)				
	FWGmw-017-181001-GW	GW		10/25/18	0950	W	3	2	2	2	2	1						10					
	FWGmw-017-181002-GW	GW		10/25/18	0950	W	2	2										4					
	FWGTB-181000-TB	TB		10/25/18	0950	W	2											2		2 Trip Blank			
<i>[Large handwritten signature]</i>																							
Relinquished by	<i>[Signature]</i>	Date	10/25/18	Received by	<i>[Signature]</i>	Date	10/25/18	Notes:	A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool, 4C											Total Number of Containers:	16	Shipment Method:	Courier
Printed Name	NEVILLE ADAMS	Time	1000P	Signature	RC	Time	1600	Notes:	1. SW 8260 2. SW 8270 3. SW 8270SIM 4. SW 8092 5. SW 8091 6. SW 8330 7. SW 5010 8. SW 9012 9. SW 9034 10. SW 8056/SW2320 11. SW 6860 12. EPA 353.2 13. SW 7195														
Leidos				Printed Name	RC																		
Relinquished by	TAI 2610	Date	10/25/18	Received by	JA Dem	Date	10/24/18	Notes:															
Signature	<i>[Signature]</i>	Time	1700	Signature	<i>[Signature]</i>	Time	0925	Notes:															
Printed Name	ROBINSON			Printed Name	Jessica Quaint																		
Company	ROBINSON			Company																			

Temperature Blank

Lab:  
**Leidos**  
 8866 Commons Drive  
 Twinsburg, OH 44087  
 (330) 405-5802

# Chain of Custody Record



COC No.: **RVAAP-029-TA**  
 Date: **10/25/18**

Page 1 of 1

Name **Leidos**  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *Jed Thomas*  
 Sampler (Printed Name) **Jed Thomas**

(Printed Name)  
**Gabrielle Geronovitsky**

Laboratory No.	Sample ID	Site Type	Depth	Date	Time	Matrix
	FWGmw-021-181001-GW	GW	<b>NA</b>	10/25/18	1410	W
	FWGmw-021-181002-GW	GW	<b>↓</b>	10/25/18	1410	W
	FWGmw-021-181001-GWMMSD	MMSD	<b>↓</b>	10/25/18	1410	W
	FWGTB-181005-TB	TB	<b>↓</b>	10/25/18	1410	W

Requested Parameters

VOCs (1)(B)	SVOCs (2)(A)	LL PAHs (3)(A)	Explosives (6)(A)	Pesticides/PCB (5)(A)	Pesticides (4)(A)	TAL Metals (7)(C)	Cyanide (8)(D)	Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)	Sulfide (9)(E)	Perchlorate (11)(A)	Nitrocellulose (12)(A)	Hexavalent Chromium (13)(A)	Temperature Blank	Total Number of Containers
3	2	2	2	2	1	1	1						13	13
													3	3
						4	2						10	10
													2	2

Extra Volume for MS/MSD, only parameters indicated

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Laboratory Name: Test America - Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

Shipment Method: Courier

Relinquished by	Signature	Date	Time	Received by	Signature	Date	Time
<i>John Adams</i>	<i>John Adams</i>	10/25/18	1000	<i>RC Pabison</i>	<i>RC Pabison</i>	10/26/18	0925

Total Number of Containers: 28

Notes:  
A. Cool, 4C  
B. HCl, pH<2, Cool, 4C  
C. HNO3, pH<2, Cool, 4C  
D. NaOH, pH>12, Cool, 4C  
E. NaOH/Zn Acetate, pH>9, Cool, 4C

Temperature Blank

Lab: **Leidos**  
 8866 Commons Drive  
 Twinsburg, OH 44087  
 (330) 405-5802

Goldenrod: Field Project Manager

Yellow: Project QAC

Pink: Project Manager

White: Laboratory

Leidos

# Chain of Custody Record



COC No.: **RVAAP-044TA**

Date: **10/24/18**

Page 1 of 1

Name Leidos  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *[Signature]*  
 (Printed Name) **Gabrielle Cromelby**

Laboratory Name: Test America - Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Requested Parameters	Matrix	Depth	Date	Time	Site Type	Sample ID	Laboratory No.
VOCs (1)(B)	W	NA	10/24/18	1545	GW	LL1mw-080-181001-GW	
SVOCs (Phthalates) (2)(A)							
LL PAHs (3)(A)							
Explosives (6)(A)							
Pesticides (5)(A)							
PCBs (4)(A)							
Arsenic (7)(C)							
Cyanide (8)(D)							
Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)							
Sulfide (9)(E)							
Perchlorate (11)(A)							
Nitrocellulose (12)(A)							
Hexavalent Chromium (13)(A)							
Temperature Blank							
Total Number of Containers							2

Notes: A. Cool, 4C  
 B. HCl, pH<2, Cool, 4C  
 C. HNO3, pH<2, Cool, 4C  
 D. NaOH, pH>12, Cool, 4C  
 E. NaOH/Zn Acetate, pH>9, Cool, 4C

1. SW 8260  
 2. SW 8270  
 3. SW 8270S1M  
 4. SW 8082  
 5. SW 8081  
 6. SW 8330  
 7. SW 6010  
 8. SW 8012  
 9. SW 9034  
 10. SW 9050/SW42320  
 11. SW 6660  
 12. EPA 353.2  
 13. SW 7196

Date: **10/25/18**  
 Time: **1100**  
 Date: **10/25/18**  
 Time: **1706**

Received by: *[Signature]*  
 Signature: **RC**  
 Printed Name: **RC**  
 Company: **ROBISON**

Received by: *[Signature]*  
 Signature: **TA**  
 Printed Name: **TA**  
 Company: **Dan**

Received by: *[Signature]*  
 Signature: **RC**  
 Printed Name: **RC**  
 Company: **ROBISON**

Shipment Method: Courier

Temperature Blank

Lab: **Leidos**  
 8866 Commons Drive  
 Twinsburg, OH 44087  
 (330) 405-5802



# Chain of Custody Record

COC No.: **RVAAP-023-TA**

Page 1 of 1

Date: **10/24/18**



Name Leidos  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P. O. No.: P010216426  
 Sampler (Signature) *[Signature]* (Printed Name) **Ben Larrich**

Laboratory Name: Test America -Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
 SPECIAL INSTRUCTIONS

Laboratory No.	Sample ID	Site Type	Depth	Date	Time	Matrix	Requested Parameters													Total Number of Containers	Shipment Method:				
							VOCs (1)(B)	SVOCs (Phthalates) (2)(A)	LL PAHs (3)(A)	Explosives (6)(A)	Pesticides (5)(A)	PCBs (4)(A)	TAL Metals (7)(C)	Cyanide (8)(D)	Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)	Sulfide (9)(E)	Perchlorate (11)(A)	Nitrocellulose (12)(A)	Hexavalent Chromium (13)(A)						
	FWGmw-015-181001-GW	GW	NA	10/24/18	1530	W	2	2	2	1									5	Courier					
Relinquished by <i>[Signature]</i>		Date	10/25/18	Time	1000	Signature	<i>[Signature]</i>	Printed Name	<b>R. TAIGER</b>	Company	Leidos	Received by <i>[Signature]</i>	<b>RC Fabian</b>	Signature	<i>[Signature]</i>	Printed Name	<b>R. TAIGER</b>	Company	Leidos	Date	10/26/18	Time	0925	Notes:	Temperature Blank
Signature		Date	10/25/18	Time	1000	Signature	<i>[Signature]</i>	Printed Name	<b>R. TAIGER</b>	Company	Leidos	Received by <i>[Signature]</i>	<b>RC Fabian</b>	Signature	<i>[Signature]</i>	Printed Name	<b>R. TAIGER</b>	Company	Leidos	Date	10/25/18	Time	1000	Notes:	Temperature Blank

White: Laboratory      Pink: Project Manager      Yellow: Project QAO      Goldenrod: Field Project Manager

# Chain of Custody Record



COC No.: **RVAAP-059-TA**

Page 1 of 1

Date: **10/25/18**

Name **Leidos**  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: **Jed Thomas**  
 Project: **RVAAP FWGW Sampling Event**  
 Job/P.O. No.: **P010216426**  
 Sampler (Signature) *Jed Thomas* (Printed Name)

Laboratory Name: **Test America -Canton**  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Requested Parameters		Total Number of Containers		Shipment Method:	
Requested Parameters	Total Number of Containers	Requested Parameters	Total Number of Containers	Requested Parameters	Total Number of Containers
VOCs (1)(B)	2	Temperature Blank	6	Requested Parameters	6
SVOCs (phthalates) (2)(A)	2	Hexavalent Chromium (13)(A)		Requested Parameters	
LL PAHs (3)(A)	2	Nitrocellulose (12)(A)		Requested Parameters	
Explosives (6)(A)	2	Perchlorate (11)(A)	1	Requested Parameters	
Pesticides (5)(A)		Sulfide (9)(E)		Requested Parameters	
PCBs (4)(A)		Nitrate (10)(A)		Requested Parameters	
TAL Metals (7)(C)	1	Cyanide (8)(D)		Requested Parameters	
Site Type	GW			Requested Parameters	
Sample ID	LL3mw-248-181001-GW			Requested Parameters	
Date	10/25/18			Requested Parameters	
Depth	N/A			Requested Parameters	
Date	10/25/18			Requested Parameters	
Time	1330			Requested Parameters	
Matrix	W			Requested Parameters	
Sampler (Signature)	<i>Jed Thomas</i>			Requested Parameters	
Sampler (Printed Name)	Jed Thomas			Requested Parameters	
Relinquished by	<i>Jed Thomas</i>	Date	10/25/18	Notes:	A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool, 4C
Signature	<i>Jed Thomas</i>	Received by	<i>Jed Thomas</i>	Date	10/25/18
Printed Name	Jed Thomas	Signature	<i>Jed Thomas</i>	Time	1330
Leidos		Printed Name	Jed Thomas	Date	10/25/18
Company		Signature	<i>Jed Thomas</i>	Time	1330
Relinquished by	<i>Rick Robinson</i>	Date	10/25/18	Notes:	1. SW 8290 2. SW 8270 3. SW 8270SIM 4. SW 8082 5. SW 8081 6. SW 8330 7. SW 6010 8. SW 9012 9. SW 6034 10. SW 9056 11. SW 6650 12. EPA 353.2 13. SW 7196
Signature	<i>Rick Robinson</i>	Received by	<i>Rick Robinson</i>	Date	10/26/18
Printed Name	Rick Robinson	Signature	<i>Rick Robinson</i>	Time	1608
Leidos		Printed Name	Rick Robinson	Date	10/26/18
Company		Signature	<i>Rick Robinson</i>	Time	0925
Relinquished by	<i>Jessie Quint</i>	Date	10/26/18	Notes:	
Signature	<i>Jessie Quint</i>	Received by	<i>Jessie Quint</i>	Date	10/26/18
Printed Name	Jessie Quint	Signature	<i>Jessie Quint</i>	Time	0925
Leidos		Printed Name	Jessie Quint	Date	10/26/18
Company		Signature	<i>Jessie Quint</i>	Time	0925

Temperature Blank  
 Lab:  
**Leidos**  
 8866 Commons Drive  
 Twinsburg, OH 44087  
 (330) 405-5802

# Chain of Custody Record



Name Leidos  
 Address: 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *[Signature]* (Printed Name) Roman Zosi

COC No.: **RVAAP-052-TA**  
 Date: **10/25/18**  
 Page 1 of 1

Laboratory Name: Test America - Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

## OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS

Requested Parameters				Total Number of Containers
VOCs (1)(B)	SVOCs (Phthalates) (2)(A)	LL PAHs (3)(A)	Explosives (5)(A)	Pesticides (5)(A)
PCBs (4)(A)	TAL Metals (7)(C)	Cyanide (8)(D)	Nitrate (10)(A)	Sulfide (9)(E)
Perchlorate (11)(A)	Nitrocellulose (12)(A)	Hexavalent Chromium (13)(A)	Temperature Blank	
			1	2
			2	2
			W	
			0912	
			10/25/18	
			MA	
			GW	
			GW	

Relinquished by *[Signature]* Date 10/25/18 Time 1000

Received by *[Signature]* Test America Date 10/25/18 Time 1600

Signature *[Signature]* Company *[Signature]*

Relinquished by NATALIE ADAMS Date 10/25/18 Time 1746

Received by Rick Rossal Date 10/26/18 Time 0925

Signature *[Signature]* Company JESSIE QUINN

Signature *[Signature]* Company

Notes:  
 A. Cool, 4C  
 B. HCl, pH<2, Cool, 4C  
 C. HNO3, pH<2, Cool, 4C  
 D. NaOH, pH>12, Cool 4C  
 E. NaOH/Zn Acetate, pH>9, Cool 4C  
 1. SW 8250  
 2. SW 8270  
 3. SW 8270S1M  
 4. SW 8082  
 5. SW 8081  
 6. SW 8330  
 7. SW 8010  
 8. SW 9012  
 9. SW 9034  
 10. SW 8056  
 11. SW 8860  
 12. EPA 353.2  
 13. SW 7196

Temperature Blank

Shipment Method: Courier

Lab: Leidos  
 8866 Commons Drive  
 Twinsburg, OH 44087  
 (330) 405-5802

# Chain of Custody Record



COC No.: **RVAAP-054-TA**

Page 1 of 1 Date: **10/25/18**

Name Leidos  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *[Signature]* (Printed Name) **Roman Zos**

Laboratory Name: Test America -Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Requested Parameters				Total Number of Containers		Shipment Method	Courier
Requested Parameters	Total Number of Containers	Temperature Blank	Total Number of Containers	Notes			
VOCS (1)(B)	2		5	A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool, 4C			
SVOCs (Phthalates)(2)(A)	2		5	E. NaOH/Zn Acetate, pH>9, Cool 4C			
LL PAHs (3)(A)	2		5				
Explosives (6)(A)	2		5				
Pesticides (5)(A)			5				
PCBs (4)(A)	1		5				
TAL Metals (7)(C)			5				
Cyanide (9)(D)			5				
Nitrate (10)(A)			5				
Sulfide (9)(E)			5				
Perchlorate (11)(A)			5				
Nitrocellulose (12)(A)			5				
Hexavalent Chromium (13)(A)			5				
Temperature Blank			5				

Relinquished by <i>[Signature]</i> Signature <b>HEATHER ADAMS</b> Printed Name Leidos Company	Date <b>10/25/18</b> Time <b>1700</b>	Received by <i>[Signature]</i> Signature <b>RC [Signature]</b> Printed Name <b>RICK ROSS</b> Company	Date <b>10/25/18</b> Time <b>1600</b>	Date <b>10/25/18</b> Time <b>0900</b>	Notes: 1. SW 8250 2. SW 8270 3. SW 8270SIM 4. SW 8062 5. SW 8081 6. SW 8330 7. SW 6010 8. SW 9012 9. SW 9034 10. SW 9056 11. SW 6960 12. EPA 353.2 13. SW 7196
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Relinquished by <i>[Signature]</i> Signature <b>TA [Signature]</b> Printed Name <b>ROBERTSON</b> Company	Date <b>10/25/18</b> Time <b>1700</b>	Received by <i>[Signature]</i> Signature <b>RC [Signature]</b> Printed Name <b>Jessica Quist</b> Company	Date <b>10/26/18</b> Time <b>0900</b>	Notes: Temperature Blank Lab: <b>Leidos</b> 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802
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# Chain of Custody Record



COC No.: **RVAAP-045-TA**  
Date: **10/25/18**

Page 1 of 1

Name Leidos  
Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
Phone Number: (330) 405-5802  
Project Manager: Jed Thomas  
Project: RVAAP FWGW Sampling Event  
Job/P.O. No.: P010216426  
Sampler (Signature) *Eli Rogatz* (Printed Name)

Laboratory Name: Test America -Canton  
Address: 4101 Shuffel St NW  
North Canton, OH 44720  
Phone: (330) 497-9396  
Fax:  
Contact:

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Requested Parameters		Total Number of Containers		Notes		Shipment Method	
Requested Parameters	Total Number of Containers	Notes	Total Number of Containers	Shipment Method			
VOCS (1)(B)		A. Cool, 4C	3	Courier			
SVOCs (2)(A)		B. HCl pH<2, Cool, 4C					
LL PAHs (3)(A)		C. HNO3, pH<2, Cool, 4C					
Explosives (6)(A)	2	D. NaOH, pH>12, Cool, 4C					
Pesticides (5)(A)		E. NaOH/Zn Acetate, pH>9, Cool 4C					
PCBs (4)(A)		1. SW 8250					
TAL Metals (7)(C)	1	2. SW 8270					
Cyanide (8)(D)		3. SW 8270S/M					
Alkalinity/Sulfate/Nitrate/Nitrite (10)(A)		4. SW 8082					
Sulfide (9)(E)		5. SW 8081					
Perchlorate (11)(A)		6. SW 8330					
Nitrocellulose (12)(A)		7. SW 8010					
Hexavalent Chromium (13)(A)		8. SW 9012					
Temperature Blank	3	9. SW 9034					
		10. SW 9056/S/M2320					
		11. SW 8860					
		12. EPA 353.2					
		13. SW 7196					

Relinquished by	Received by	Date	Date
<i>Jed Thomas</i> Signature Printed Name Leidos Company	<i>Test America</i> Signature Printed Name Rick Posson Company	10/25/18 1000	10/25/18 1600
<i>Jed Thomas</i> Signature Printed Name Leidos Company	<i>JA Dan</i> Signature Printed Name Rick Posson Company	10/25/18 1700	10/26/18 0925

# Chain of Custody Record

COC No.: RVAAP-055-TA

Date: 10/25/18

Page 1 of 1



Name Leidos  
 Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087  
 Phone Number: (330) 405-5802  
 Project Manager: Jed Thomas  
 Project: RVAAP FWGW Sampling Event  
 Job/P.O. No.: P010216426  
 Sampler (Signature)

(Printed Name)

Roman Zoss

Laboratory Name: Test America -Canton  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:

OBSERVATIONS, COMMENTS  
SPECIAL INSTRUCTIONS

Requested Parameters	VOCs (1)(b)	SVOCs (2)(a)	LL PAHs (3)(A)	Explosives (6)(A)	Pesticides (5)(A)	PCBs (4)(A)	TAL Metals (7)(C)	Cyanide (8)(D)	Nitrate (10)(A)	Sulfide (9)(E)	Perchlorate (11)(A)	Nitrocellulose (12)(A)	Hexavalent Chromium (13)(A)	Temperature Blank	Total Number of Containers				
																1	1		
Matrix	W	Time	1500	Date	10/25/18	Depth	NA	Site Type	GW	Sample ID	LL2mw-272-181001-GW	Laboratory No.							
Received by	Test America	Signature	<i>RC Robin</i>	Printed Name	RC Robin	Company	Test America	Date	10/15/18	Time	1600	Received by	Jed Thomas	Signature	<i>Jed Thomas</i>	Printed Name	Jed Thomas	Company	Leidos
Received by	TA Dem	Signature	<i>TA Dem</i>	Printed Name	TA Dem	Company	Test America	Date	10/25/18	Time	1740	Received by	Rick	Signature	<i>Rick</i>	Printed Name	Rick	Company	Leidos
Received by	Jessiva Quint	Signature	<i>Jessiva Quint</i>	Printed Name	Jessiva Quint	Company	Leidos	Date	10/26/18	Time	0925	Received by	Rick	Signature	<i>Rick</i>	Printed Name	Rick	Company	Leidos
Notes:		A. Cool, 4C B. HCl pH=2, Cool, 4C C. HNO3, pH=2, Cool, 4C D. NaOH, pH=12, Cool 4C E. NaOH/Zn Acetate, pH=9, Cool 4C		Total Number of Containers: 1		Shipment Method: Courier		Temperature Blank		Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802									

# Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-116186-2

**Login Number: 116186**  
**List Number: 1**  
**Creator: Staack, KiAundra A**

**List Source: TestAmerica Denver**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	False	ONE COOLER CUSTODY SEAL WAS NOT INTACT
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	