

**ANALYTICAL REPORT**

Job Number: 280-123467-2

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  
5/17/2019 9:57 AM

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Donna R Rydberg, Senior Project Manager  
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05/17/2019

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.

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# Definitions/Glossary

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

Job ID: 280-123467-2

## Qualifiers

### General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

## 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
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: 280-123467-2**

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 5/7/2019 at 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.1° C, 2.6° C, 2.8° C and 3.9° C.

This report only contains the results for the Hexavalent chromium samples as the Eurofins TestAmerica North Canton lab does not have DOD Certification for this method; therefore the data can not be reported under the DOD formatter and flagging requirements. All other samples on the COC were logged and will be reported under job 280-123467-1.

### **HEXAVALENT CHROMIUM**

Samples FBQmw-175-190401-GW (280-123467-3) and FBQmw-175-190402-GW (280-123467-4) were analyzed for hexavalent chromium in accordance with EPA SW-846 Method 7196A. The samples were analyzed on 05/07/2019.

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

Job ID: 280-123467-2

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**Client Sample ID: FBQmw-175-190401-GW**

**Lab Sample ID: 280-123467-3**

No Detections.

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**Client Sample ID: FBQmw-175-190402-GW**

**Lab Sample ID: 280-123467-4**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

# Client Sample Results

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

Job ID: 280-123467-2

## General Chemistry

**Client Sample ID: FBQmw-175-190401-GW**

**Date Collected: 05/07/19 11:15**

**Date Received: 05/07/19 13:47**

**Lab Sample ID: 280-123467-3**

**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	0.010	U	0.020	0.010	0.0030	mg/L	05/07/19 16:50	1

**Client Sample ID: FBQmw-175-190402-GW**

**Date Collected: 05/07/19 11:15**

**Date Received: 05/07/19 13:47**

**Lab Sample ID: 280-123467-4**

**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyzed	Dil Fac
Hexavalent chromium	0.010	U	0.020	0.010	0.0030	mg/L	05/07/19 16:52	1

# Default Detection Limits

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

Job ID: 280-123467-2

## General Chemistry

Analyte	RL	MDL	Units
Hexavalent chromium	0.020	0.0030	mg/L



# QC Sample Results

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

Job ID: 280-123467-2

## Method: 7196A - Chromium, Hexavalent

**Lab Sample ID: MB 240-379974/3**  
**Matrix: Water**  
**Analysis Batch: 379974**

**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		05/07/19 09:37	1

**Lab Sample ID: LCS 240-379974/4**  
**Matrix: Water**  
**Analysis Batch: 379974**

**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	0.263		mg/L		105	80 - 123

**Lab Sample ID: 280-123467-3 MS**  
**Matrix: Water**  
**Analysis Batch: 379974**

**Client Sample ID: FBQmw-175-190401-GW**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexavalent chromium	0.010	U	0.250	0.249		mg/L		100	31 - 151

**Lab Sample ID: 280-123467-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 379974**

**Client Sample ID: FBQmw-175-190401-GW**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexavalent chromium	0.010	U	0.250	0.262		mg/L		105	31 - 151	5	20

# QC Association Summary

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

Job ID: 280-123467-2

## General Chemistry

### Analysis Batch: 379974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123467-3	FBQmw-175-190401-GW	Total/NA	Water	7196A	
280-123467-4	FBQmw-175-190402-GW	Total/NA	Water	7196A	
MB 240-379974/3	Method Blank	Total/NA	Water	7196A	
LCS 240-379974/4	Lab Control Sample	Total/NA	Water	7196A	
280-123467-3 MS	FBQmw-175-190401-GW	Total/NA	Water	7196A	
280-123467-3 MSD	FBQmw-175-190401-GW	Total/NA	Water	7196A	

# Lab Chronicle

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

Job ID: 280-123467-2

**Client Sample ID: FBQmw-175-190401-GW**

**Lab Sample ID: 280-123467-3**

**Date Collected: 05/07/19 11:15**

**Matrix: Water**

**Date Received: 05/07/19 13:47**

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	379974	05/07/19 16:50	BLW	TAL CAN

**Client Sample ID: FBQmw-175-190402-GW**

**Lab Sample ID: 280-123467-4**

**Date Collected: 05/07/19 11:15**

**Matrix: Water**

**Date Received: 05/07/19 13:47**

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	379974	05/07/19 16:52	BLW	TAL CAN

**Laboratory References:**

TAL CAN = Eurofins 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

Job ID: 280-123467-2

## Laboratory: Eurofins TestAmerica, Denver

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

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

## Laboratory: Eurofins 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	02-23-20
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	04-30-20
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
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	03-31-20
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-20
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	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

# Method Summary

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

Job ID: 280-123467-2

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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 = Eurofins 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

Job ID: 280-123467-2

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collected</b>	<b>Received</b>
280-123467-3	FBQmw-175-190401-GW	Water	05/07/19 11:15	05/07/19 13:47
280-123467-4	FBQmw-175-190402-GW	Water	05/07/19 11:15	05/07/19 13:47

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>WCCHROME50PM2 00024</b>	06/06/19	03/12/19	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 00029</b>	09/11/19	03/12/19	DIWATER, Lot 052014	1000 mL	WCKDICHROME62_00006	0.1414 g	Hexavalent chromium	49.9764 mg/L
.WCKDICHROME62_00006	09/19/22		Fisher, Lot 172080		(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\_00006**



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 - 0090918

This is to certify that units of the lot number below 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> 3/6/2017	
<b>Lot Number</b>	<b>172080</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>Mar-2022</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	101.4
CALCIUM	%	<= 0.003	0.0010
CHLORIDE	%	<= 0.001	0.0010
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.001
IRON (Fe)	%	<= 0.001	0.0010
LOSS ON DRYING @ 105 C	%	<= 0.05	0.01
SODIUM (Na)	%	<= 0.02	0.001
SULFATE (SO4)	%	<= 0.005	0.003



*Jerusa Bailey-Wyche*

**Quality Assurance Specialist - Certificate of Analysis 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.

# **GENERAL CHEMISTRY**

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job Number: 280-123467-2

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

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID	Lab Sample ID
<u>FBQmw-175-190401-GW</u>	<u>280-123467-3</u>
<u>FBQmw-175-190402-GW</u>	<u>280-123467-4</u>

Comments:

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1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: FBQmw-175-190401-GW

Lab Sample ID: 280-123467-3

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-123467-2

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

Matrix: Water

Date Sampled: 05/07/2019 11:15

Reporting Basis: WET

Date Received: 05/07/2019 13:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	0.010	0.020	0.0030	mg/L	U		1	7196A

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: FBQmw-175-190402-GW

Lab Sample ID: 280-123467-4

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-123467-2

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

Matrix: Water

Date Sampled: 05/07/2019 11:15

Reporting Basis: WET

Date Received: 05/07/2019 13:47

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
18540-29-9	Hexavalent chromium	0.010	0.020	0.0030	mg/L	U		1	7196A

2-IN  
CALIBRATION QUALITY CONTROL  
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Analyst: BLW Batch Start Date: 04/13/2019

Reporting Units: mg/L Analytical Batch No.: 376354

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	09:45	Hexavalent chromium	0.256	0.250	102	90-110		WCCHROME50PM2_0002 4

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



2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2  
 SDG No.: \_\_\_\_\_  
 Analyst: BLW Batch Start Date: 05/07/2019  
 Reporting Units: mg/L Analytical Batch No.: 379974

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	09:37	Hexavalent chromium	0.259	0.250	104	90-110		WCCHROME50PPM_00029
2	CCB	09:37	Hexavalent chromium	0.010				U	
12	CCV	09:45	Hexavalent chromium	0.256	0.250	102	90-110		WCCHROME50PPM_00029
13	CCB	09:46	Hexavalent chromium	0.010				U	
15	CCV	09:50	Hexavalent chromium	0.256	0.250	102	90-110		WCCHROME50PPM_00029
16	CCB	09:51	Hexavalent chromium	ND					
21	CCV	16:53	Hexavalent chromium	0.236	0.250	95	90-110		WCCHROME50PPM_00029
22	CCB	16:54	Hexavalent chromium	0.010				U	

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

3-IN  
METHOD BLANK  
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton

Job No.: 280-123467-2

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

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 379974 Date: 05/07/2019 09:37							
7196A	MB 240-379974/3	Hexavalent chromium	ND		mg/L	0.020	1

5-IN  
 MATRIX SPIKE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 379974 Date: 05/07/2019 16:51											
7196A	280-123467-3	Hexavalent chromium	0.010	U	mg/L						
7196A	280-123467-3	Hexavalent chromium	0.249		mg/L	0.250	100	31-151			
	MS										

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

5-IN  
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 379974 Date: 05/07/2019 16:52											
7196A	280-123467-3	Hexavalent chromium	0.262		mg/L	0.250	105	31-151	5	20	
	MSD										

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

7A-IN  
 LAB CONTROL SAMPLE  
 GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 379974 Date: 05/07/2019 09:37											
						LCS Source: WCCHROME50PM2_00024					
7196A	LCS 240-379974/4	Hexavalent chromium	0.263		mg/L	0.250	105	80-123			

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

9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job Number: 280-123467-2  
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: Eurofins TestAmerica, Canton Job Number: 280-123467-2  
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: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 04/13/2019 09:45 End Date: 04/13/2019 10:25

Lab Sample Id	D/F	T y p e	Time	C r 6	Analytes																			
IC 240-376354/1	1		09:45	X																				
IC 240-376354/2	1		09:45	X																				
IC 240-376354/3	1		09:45	X																				
IC 240-376354/4	1		09:45	X																				
IC 240-376354/5	1		09:45	X																				
IC 240-376354/6	1		09:45	X																				
ICV 240-376354/7	1		09:45	X																				
ICB 240-376354/8			09:45																					
ZZZZZZ			09:47																					
ZZZZZZ			09:47																					
ZZZZZZ			10:20																					
ZZZZZZ			10:21																					
ZZZZZZ			10:22																					
ZZZZZZ			10:23																					
ZZZZZZ			10:24																					
CCV 240-376354/14			10:25																					
CCB 240-376354/15			10:25																					

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



13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Instrument ID: OSCAR Analysis Method: 7196A

Start Date: 05/07/2019 09:37 End Date: 05/07/2019 16:54

Lab Sample Id	D/F	Type	Time	C r 6	Analytes																			
CCV 240-379974/1	1		09:37	X																				
CCB 240-379974/2	1		09:37	X																				
MB 240-379974/3	1	T	09:37	X																				
LCS 240-379974/4	1	T	09:37	X																				
ZZZZZZ			09:40																					
ZZZZZZ			09:41																					
ZZZZZZ			09:42																					
ZZZZZZ			09:42																					
ZZZZZZ			09:43																					
ZZZZZZ			09:44																					
ZZZZZZ			09:44																					
CCV 240-379974/12	1		09:45	X																				
CCB 240-379974/13	1		09:46	X																				
ZZZZZZ			09:49																					
CCV 240-379974/15	1		09:50	X																				
CCB 240-379974/16	1		09:51	X																				
280-123467-3	1	T	16:50	X																				
ZZZZZZ			16:50																					
280-123467-3 MS	1	T	16:51	X																				
280-123467-3 MSD	1	T	16:52	X																				
280-123467-4	1	T	16:52	X																				
CCV 240-379974/21	1		16:53	X																				
CCB 240-379974/22	1		16:54	X																				

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

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Batch Number: 376354 Batch Start Date: 04/13/19 09:45 Batch Analyst: Woodward, Bruce

Batch Method: 7196A Batch End Date: 04/13/19 10:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	UnCorResp	WCCHROME50PM2 00024	WCCHROME50PPM 00029	
IC 240-376354/1		7196A		50 mL	50 mL	0 Absorbance			
IC 240-376354/2		7196A		50 mL	50 mL	0.002 Absorbance		0.005 mL	
IC 240-376354/3		7196A		50 mL	50 mL	0.005 Absorbance		0.01 mL	
IC 240-376354/4		7196A		50 mL	50 mL	0.073 Absorbance		0.1 mL	
IC 240-376354/5		7196A		50 mL	50 mL	0.180 Absorbance		0.25 mL	
IC 240-376354/6		7196A		50 mL	50 mL	0.351 Absorbance		0.5 mL	
ICV 240-376354/7		7196A		50 mL	50 mL	0.181 Absorbance	0.25 mL		

Batch Notes	
Acid Used for pH Adjustment ID	4037037
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	4103451
Pipette/Syringe/Dispenser ID	E13

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: Eurofins TestAmerica, Canton Job No.: 280-123467-2

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

Batch Number: 379974 Batch Start Date: 05/07/19 09:37 Batch Analyst: Woodward, Bruce

Batch Method: 7196A Batch End Date: 05/07/19 17:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ColorBlk	UnCorResp	WCCHROME50PM2 00024	WCCHROME50PPM 00029
CCV 240-379974/1		7196A		50 mL	50 mL		0.183 Absorbance		0.25 mL
CCB 240-379974/2		7196A		50 mL	50 mL		0 Absorbance		
MB 240-379974/3		7196A		50 mL	50 mL		0 Absorbance		
LCS 240-379974/4		7196A		50 mL	50 mL		0.186 Absorbance	0.25 mL	
CCV 240-379974/12		7196A		50 mL	50 mL		0.181 Absorbance		0.25 mL
CCB 240-379974/13		7196A		50 mL	50 mL		0 Absorbance		
CCV 240-379974/15		7196A		50 mL	50 mL		0.181 Absorbance		0.25 mL
CCB 240-379974/16		7196A		50 mL	50 mL		0 Absorbance		
280-123467-A-3	FBQmw-175-190401 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
280-123467-A-3 MS	FBQmw-175-190401 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0.176 Absorbance	0.25 mL	
280-123467-A-3 MSD	FBQmw-175-190401 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0.185 Absorbance	0.25 mL	
280-123467-A-4	FBQmw-175-190402 -GW	7196A	T	50 mL	50 mL	0 Absorbance	0 Absorbance		
CCV 240-379974/21		7196A		50 mL	50 mL		0.167 Absorbance		0.25 mL
CCB 240-379974/22		7196A		50 mL	50 mL		0 Absorbance		

Batch Notes	
Acid Used for pH Adjustment ID	4037038
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	4119054
Pipette/Syringe/Dispenser ID	E5

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.

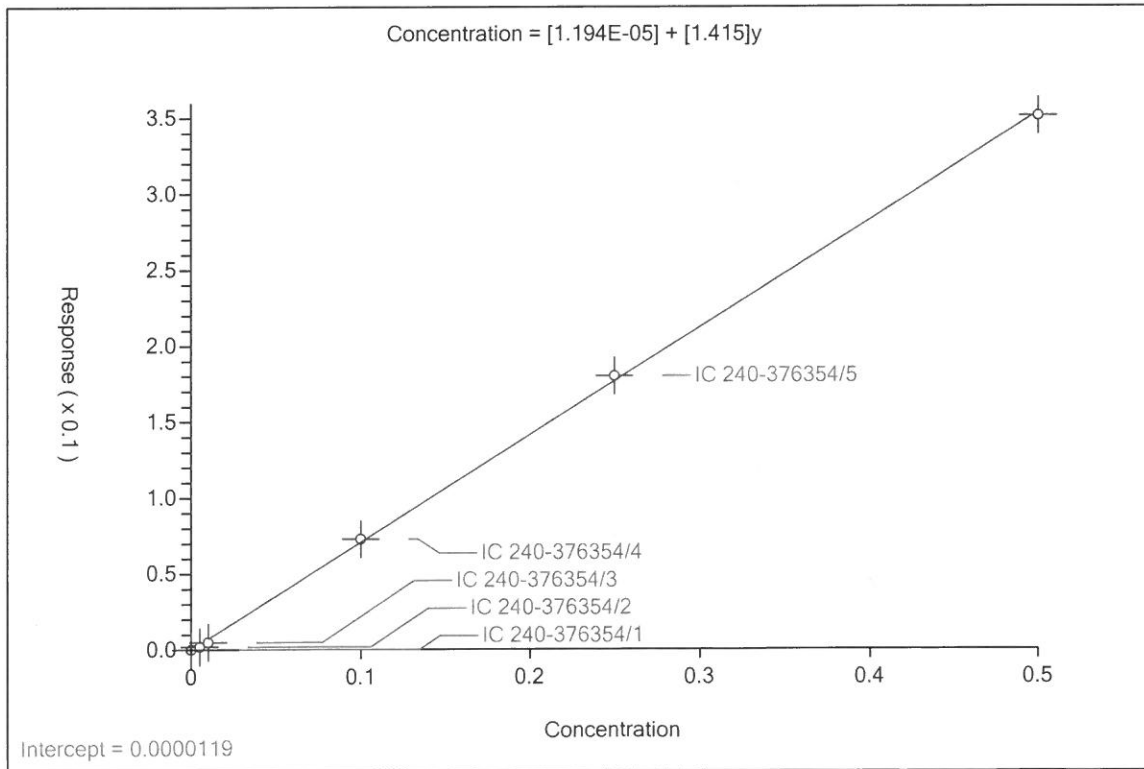
Calibration

Calib 376354-0 / Cr (VI)

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

Curve Coefficients	
Intercept:	1.194E-05
Slope:	1.415
Error Coefficients	
Standard Error:	0.00378
Relative Standard Error:	30.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000 (1.000)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 240-376354/1	0.0	0.0			NaN	Y
2	IC 240-376354/2	0.004998	0.002			0.400189	Y
3	IC 240-376354/3	0.009995	0.005			0.500236	Y
4	IC 240-376354/4	0.099953	0.073			0.730345	Y
5	IC 240-376354/5	0.249882	0.18			0.72034	Y
6	IC 240-376354/6	0.499764	0.351			0.702332	Y



# Subcontract Data

# Shipping and Receiving Documents




# Chain of Custody Record

COC No.: **RVAAP-151-TA**

Date: **05/07/2019**

Page of 1

<b>Name Leidos</b> Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>[Signature]</i> (Printed Name) <b>Lindsey Meyer</b>			Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:		
Requested Parameters	TAL Metals (7)(C) 1 Temperature Blank 1 Total Number of Containers 1		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS		
 280-123487 Chain of Custody					
Relinquished by	Signature	Date	Received by	Signature	Date
<i>[Signature]</i>	<i>[Signature]</i>	5/7/19	<i>[Signature]</i>	<i>[Signature]</i>	5/7/19
Printed Name	Leidos	Time	Printed Name	Company	Notes:
<b>Hester Adams</b>	Leidos	1515	<b>Rek Robison</b>	Company	A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B
Relinquished by	Signature	Date	Received by	Signature	Date
<i>[Signature]</i>	<i>[Signature]</i>	5/8/19	<i>[Signature]</i>	<i>[Signature]</i>	5/8/19
Printed Name	Company	Time	Printed Name	Company	Time
<b>[Signature]</b>		1515	<b>[Signature]</b>		905
Shipment Method: Courier Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802					

39, 2.8, 0.1, +0, 1.8, altered by 88, 5/8/19



# Chain of Custody Record

COC No.: **RVAAP-150TA**

Date: **05/07/2019**

Page 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 Spring 2019  
 Job/P.O. No.: P010216426  
 Sampler (Signature) *JM Thomas*

(Printed Name) **Jed Thomas**

Laboratory No.	Sample ID	Site Type	Date	Time	Matrix	Requested Parameters										Total Number of Containers	OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS			
						Explosives (6)(A)	TAL Metals (7)(C)	Temperature Blank												
	LL1mw-065-190401-GW		05/07/19	1314	W	2	1									3				
Relinquished by <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Signature: <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Printed Name: <b>HEATHER ADAMS</b>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Leidos						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Company						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Relinquished by <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Signature: <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Printed Name: <b>[Signature]</b>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Company						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Received by <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Signature: <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Printed Name: <b>REK ROBISON</b>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Company						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Received by <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Signature: <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Printed Name: <b>CHRISTOPHER</b>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Company						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Relinquished by <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Signature: <i>[Signature]</i>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Printed Name: <b>ADAM</b>						Requested Parameters											Total Number of Containers: 3		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Company						Requested Parameters											Total Number of Containers: 3		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

Temperature Blank

Lab:

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





# Chain of Custody Record

COC No.: **RVAAP-147-TA**

Date: **05/07/19**

Page 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 Spring 2019**  
 Job/P.O. No.: **P010216426**  
 Sampler **[Signature]** (Printed Name)

Laboratory No.	Sample ID	Site Type	Date	Time	Matrix
	FBQmw-175-190401-GW		5/7/19	1115	W
	FBQmw-175-190401-GWMSD		↓	1115	W
	FBQmw-175-190402-GW			1115	W

Relinquished by **[Signature]**  
 Signature: **[Signature]**  
 Printed Name: **Wendee Adams**  
 Leidos  
 Company

Received by **[Signature]**  
 Signature: **[Signature]**  
 Printed Name: **Rick Reosol**  
 Company: **Test America**

Relinquished by **[Signature]**  
 Signature: **[Signature]**  
 Printed Name: **Ray 240**  
 Leidos  
 Company

Received by **[Signature]**  
 Signature: **[Signature]**  
 Printed Name: **Chris Kouitch**  
 Company: **Chris Kouitch**

Requested Parameters	Sulfide (9)(E)	Nitrate/Nitrite/Sulfate (10)(A)	Alkalinity (14)(A)	Hexavalent Chromium (13)(A) *	Temperature Blank	Total Number of Containers
	1	1		1		3
						1
	1	1		1		3

Date: **5/7/19**  
 Time: **1515**

Date: **5/8/19**  
 Time: **905**

Date: **5/8/19**  
 Time: **905**

Date: **5/8/19**  
 Time: **1622**

Notes:  
 A. Cool, 4C  
 B. HCl, pH<2, Cool, 4C  
 C. HNO3, pH<2, Cool, 4C  
 D. NaOH, pH>12, Cool, 4C  
 1. SW 8260B  
 2. SW 8270D  
 3. SW 8270D SIM  
 4. SW 8082A  
 5. SW 8081B  
 6. SW 8330  
 7. SW 6010/6020/7470  
 8. SW 9012B  
 9. SW 9034  
 10. SW 9056/9056A  
 11. SW 6860  
 12. EPA 353.2  
 13. SW 7196  
 14. SM2320B

Laboratory Name: **Test America - Canton**  
 Address: 4101 Shuffel St NW  
 North Canton, OH 44720  
 Phone: (330) 497-9396  
 Fax:  
 Contact:  
 OBSERVATIONS, COMMENTS  
 SPECIAL INSTRUCTIONS  
 Cr6 24 hr HT bottles stay at No. CANTON  
 Cr6 24 hr HT bottles stay at No. CANTON  
 Cr6 24 hr HT bottles stay at No. CANTON

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



# Chain of Custody Record

COC No.: **RVAAP-146-TA**

Date: **05/07/2019**

Page of 1

<b>Name Leidos</b> Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>[Signature]</i>		<b>Requested Parameters</b> Cyanide (8)(D) 1 Alkalinity (14)(A) 1 TAL Metals (7)(C) 2 Temperature Blank 4 Total Number of Containers: 8		<b>Laboratory Name: Test America - Canton</b> Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact: OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS <b>ONE METAL FIELD FILTERED SAMPLE COLLECTED.</b>	
<b>Relinquished by</b> <i>[Signature]</i> HEATHER ADAMS Printed Name Leidos Company		<b>Received by</b> <i>[Signature]</i> RE ROBISON Printed Name REIK ROBISON Company		<b>Date</b> 05/07/19 <b>Time</b> 1515 <b>Date</b> 5/7/19 <b>Time</b> 1515	
<b>Relinquished by</b> <i>[Signature]</i> Printed Name Signature		<b>Received by</b> <i>[Signature]</i> Printed Name Signature		<b>Date</b> 5/7/19 <b>Time</b> 1515 <b>Date</b> 5/8/19 <b>Time</b> 905	
<b>Notes:</b> A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B		<b>Shipment Method:</b> Courier		<b>Temperature Blank</b> <b>Leidos</b> 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802	



# Chain of Custody Record

COC No.: **RVAAP-145-TA**  
Date: **05/07/2019**

Page 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 Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>Charles Spur</i> (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 Site Type Date Time Matrix	EBGmw-131-190401-GW   5/7/19 1205 W	Requested Parameters Total Number of Containers Temperature Blank Cyanide (8)(D)	1 1 1
Relinquished by Signature Printed Name Leidos Company	<i>Edman</i> Edman Leidos Company	Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	Shipment Method: Courier
Received by Signature Printed Name Company	<i>Test America</i> Test America Company	Date Time Date Time	5/7/19 1515 5/8/19 905
Relinquished by Signature Printed Name Leidos Company	<i>Michelle Adams</i> Michelle Adams Leidos Company	Received by Signature Printed Name Company	<i>Chris Kautch</i> Chris Kautch Company
Relinquished by Signature Printed Name Leidos Company	<i>[Signature]</i>    	Received by Signature Printed Name Company	<i>[Signature]</i>    



Chain of Custody Record

COC No.: RVAAP-144-TA

Date: 05/07/2019

Page 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 Spring 2019
Job/P.O. No.: P010216426
Sampler (Signature) Charles Spurr (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

Table with columns: Requested Parameters, Total Number of Containers, Temperature Blank, Notes, Date, Time. Includes notes for various parameters like Cool, 4C and HCl, pH<2, Cool, 4C.

Received by: Tey Ampere (Signature), Tey Ampere (Printed Name), Date: 5/7/19, Time: 1055, Matrix: W

Relinquished by: [Signature], [Signature], Date: 05/07/19, Time: 1515, Leidos Company

Relinquished by: [Signature], [Signature], Date: 5/7/19, Time: 1600, Leidos Company

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



# Chain of Custody Record

COC No.: **RVAAP-143TA**  
Date: **5-7-19**

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 Spring 2019  
Job/P.O. No.: P010216426  
Sampler (Signature) *[Signature]* (Printed Name) **Bobby Guonofsky**

Laboratory No.	Sample ID	Site Type	Date	Time	Matrix
	LL1mw-089-190401-GW		5-7-19	0920	W
	LL1mw-089-190401-GWMSD		5-7-19	0920	W
	LL1mw-089-190402-GW		5-7-19	0920	W

Relinquished by	Date	Signature	Company
<i>[Signature]</i>	05/07/19	<i>[Signature]</i>	Test America
<i>[Signature]</i>		<i>[Signature]</i>	Leidos

Relinquished by	Date	Time	Signature	Company
<i>[Signature]</i>	5/7/19	1515	<i>[Signature]</i>	Leidos
<i>[Signature]</i>	5/7/19	1515	<i>[Signature]</i>	Leidos

Relinquished by	Date	Time	Signature	Company
<i>[Signature]</i>	5/7/19	1515	<i>[Signature]</i>	Leidos
<i>[Signature]</i>	5/7/19	1515	<i>[Signature]</i>	Leidos

Requested Parameters	Explosives (b)(A)	Nitrocellulose (12)(A)	Nitroguanidine (6)(A)	Temperature Blank	Total Number of Containers
	2	2	2		6
	2	4	4		8
	2	2	2		6

**Notes:**  
 A. Cool, 4C  
 B. HCl, pH<2, Cool, 4C  
 C. HNO3, pH<2, Cool, 4C  
 D. NaOH, pH>12, Cool 4C  
 1. SW 8260B  
 2. SW 8270D  
 3. SW 8270D SIM  
 4. SW 8082A  
 5. SW 8081B  
 6. SW 8330  
 7. SW 6010/6020/7470  
 8. SW 9012B  
 9. SW 9034  
 10. SW 9056/9056A  
 11. SW 6860  
 12. EPA 353.2  
 13. SW 7196  
 14. SM2320B

**Shipment Method:** Courier

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

**OBSERVATIONS, COMMENTS**  
**SPECIAL INSTRUCTIONS**

**Temperature Blank**

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



# Chain of Custody Record

COC No.: **RVAAP-42-TA**

Date: **05/06/2019**

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<b>Name Leidos</b> Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FW/GW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>Charles Spur</i> (Printed Name)			<b>Laboratory Name: Test America - Canton</b> Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:		
Laboratory No. Sample ID Site Type Date Time Matrix	LL1mw-081-190401-GW   5/6/19 1505 W	Requested Parameters Cyanide (8)(D) Explosives (6)(A)	Total Number of Containers Temperature Blank	3 3	
Relinquished by Signature Printed Name Leidos Company	<i>Adam</i> HEATHER ADAMS  Date: 05/06/19 Time: 1515	Received by Signature Printed Name Company	Date: 5/7/19 Time: 1575	Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Relinquished by Signature Printed Name Leidos Company	<i>[Signature]</i>  Date: 5/8/19 Time: 905	Received by Signature Printed Name Company	Date: 5/8/19 Time: 905	Shipment Method: Courier	
Relinquished by Signature Printed Name Leidos Company	<i>[Signature]</i>  Date: 5/7/19 Time: 905	Received by Signature Printed Name Company	Date: 5/7/19 Time: 905	Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802	





# Chain of Custody Record

COC No.: RVAAP-14-TA

Date: 05/06/2019

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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 Spring 2019  
 Job/P.O. No.: P010216426  
 Sampler (Signature)

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
Cyanide (g)(D)	1	Courier
Temperature Blank	1	

Notes: A. Cool, 4C  
 B. HCl, pH<2, Cool, 4C  
 C. HNO3, pH<2, Cool, 4C  
 D. NaOH, pH>12, Cool 4C

Notes:  
 1. SW 8260B  
 2. SW 8270D  
 3. SW 8270D SIM  
 4. SW 8082A  
 5. SW 8081B  
 6. SW 8330  
 7. SW 6010/6020/7470  
 8. SW 9012B  
 9. SW 9034  
 10. SW 9056/9056A  
 11. SW 6860  
 12. EPA 353.2  
 13. SW 7196  
 14. SM2320B

Name Lindsey Meyer  
 (Printed Name)

Relinquished by [Signature]  
 Signature  
 Printed Name  
 Leidos  
 Company

Date 05/07/19  
 Time 1515

Received by Test America  
 Signature  
 Printed Name  
 Company

Date 05/18/19  
 Time 905

Relinquished by [Signature]  
 Signature  
 Printed Name  
 Company

Date 05/18/19  
 Time 905

Received by [Signature]  
 Signature  
 Printed Name  
 Company

# Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-123467-2

**Login Number: 123467**  
**List Number: 1**  
**Creator: Rydberg, Donna R**

**List Source: Eurofins TestAmerica, Denver**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
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.	True	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	